A short FLORA of BERWICKSHIRE

Michael Braithwaite

SHOUT
SHARE
IT

A short Flora of

Berwickshire

2014

Dedication

To my wife Paddy
for her never failing support at home and in the field

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A number of sections in this book are based on papers by the author published in the journals
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as listed in the 'References and bibliography' section
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towards the cost of printing *A short Flora of Berwickshire* as a book in 2014

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Berwickshire

2014

Michael E Braithwaite

As Vice-county Recorder for the Botanical Society of Britain and Ireland

About BSBI

The Botanical Society of Britain and Ireland

- Has a membership of about 3,000 amateur and professional botanists
- Is the leading charitable society promoting the study and enjoyment of British and Irish wild plants
- Maintains a network of 152 Vice-county recorders, a panel of referees for difficult plants and a central plant distribution database
- Maintains a taxonomic database that enables the list of British and Irish plants to be kept up to date
- Carries out national surveys and publishes the results, notably the *New Atlas of the British and Irish Flora*, 2002, and *Change in the British Flora, 1987-2004*
- Publishes authoritative identification handbooks on difficult plants such as grasses, sedges and roses
- Promotes the publication of local floras and county rare plant registers
- Holds field meetings and conferences to bring botanists together, whether amateur or professional
- Publishes journals to enable members to share their observations and the results of their studies
- Encourages the training of botanists of all ages

More information will be found on the BSBI web site at www.bsbi.org.uk

Membership and other enquiries may be sent to BSBI Honorary General Secretary, c/o Department of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD.

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Acknowledgements

Access

The author acknowledges with deep gratitude the remarkable tolerance he has enjoyed in his recording activities from landowners and land managers. Permission for access has been sought and granted for in-bye land away from footpaths but has been enjoyed as a privilege on more open land. The inclusion of records from a site must not be taken as an open invitation to visit.

Recorders

This botanical site register would not have been possible without the contributions of generations of fellow botanists. Those who have helped in recent years include my wife Paddy, Luke Gaskell and Dr David Long. Neighbouring BSBI vice-county recorders who have contributed include Dr Roderick Corner and David McCosh. Jackie Muscott has often been accompanied on her visits by fellow members of the Edinburgh Natural History Society. The Berwickshire Naturalists' Club has also given valuable support. A number of visiting botanists have studied the aquatic flora of the river Tweed. The most recent of these have been Richard Lansdown and Timothy Pankhurst with Jane Croft and Dr Christopher Preston slightly earlier and before them Dr Nigel Holmes. Other BSBI members have visited for field meetings and have acted as referees. Christopher Badenoch was very active across Berwickshire as a whole in the 1970’s and 1980’s as was Dr Albert Long as vice-county recorder in the 1950’s and 1960’s. The contributions of some earlier botanists are celebrated in the section on ‘the history of botanical recording in Berwickshire’.

Recorders 1987-2013
S Adair, D Adamson, Ms J Armishaw, Dr F M Aungier, B Averis, C O Badenoch, G H Ballantyne, J Blane, BNC party, Borders Forest Trust, M E Braithwaite, Mrs P F Braithwaite, A T Bramhall, R Brandt, A Brown, Mrs K E H Brownlie, BSBI party, I Carle, A Chessell, A Cooney, Dr R W M Corner, I Cowe, R Cowe, Mrs J Croall, Mrs J M Croft, N Crowther, I Curtis, K Dale, T Dargie, A J Davies, J J Day, N Dayton, N Dickson, C Dixon, D P Earl, E Easton, H H Edie, B Edwards, Lady Margaret Elliot, R R Elliot, D Ellis, ENHS party, A Espir, Mrs F Evans, Ms M Findlay, M Foley, L W Gaskell, Miss S Ghosh, W D Gill, M F Godfrey, D Graham, A Gray, P R Green, Ms M Griffiths, Lady Haig, A Halstead, Dr F G Hardy, Mrs G Hargreaves, Dr B Harvie, D M Hawker, D Hicks, Dr P Hollingsworth, R Holme, Miss E H Jackson, J Jamieson, A R Jermyn, Miss Jermyn, Ms C Jones, V Jones, Ms M Jordan, D Kennedy, D Kerr, R V Lansdown, Mrs E Lavery, O J Leyshon, Mrs M Little, Dr D G Long, R Lumb, Dr P S Lusby, S Macpherson, Mrs M Magee, R Manning, J T Martin, R Maskew, R McBeath, A McBride, D J McCosh, G McDougall, J McIntosh, D R McKean, Dr J T Mercer, Mrs A Mercer, D Methven, N Morgan, L Muirden, Mrs J Murray, Miss J Muscott, M Mutch, D Needham, M Osborne, Dr R J Pankhurst, T J Pankhurst, G R C Passmore, G Paton, D Patterson, Mrs P Payne, D A Pearman, M Porter, B Prater, Mrs B Prater, Dr C D Preston, T Rafferty, K J Rideout, C K Robeson, D Rollo, M Scott, Miss A Scott-Plummer, Mrs B L Seed, M Sinclair, R Singleton, Ms L Slade, A J Smith, D B Smith, D H Smith, M Smith, R Spalding, St Abbs Head Rangers, Mrs O M Stewart, Dr B E H Sumner, SWT party, SWT survey, Mrs M Tebble, TWIC party, A Van De Beek, Dr K A Velander, J Waddell, Mrs B Walker, Mrs D Walton, J Warman, Ms M Warriner, Mrs M Watson, A West, WFS party, Mrs S Wilberforce, Miss S Williams, Willow Symposium party, J Winham, D Wood, R Woodall, Mr Yuille.

Determiners 1987-2013 (those not already listed as recorders)
P J Acock, Dr J R Akeroyd, K Ashburner, Prof R M Bateman, A O Chater, R J Cooke, Dr T A Cope, C S Crook, Dr R M Harley, Dr B Harold, A C Jermy, Dr H McHaffie, R D Meikle, Dr T D Pennington, Dr T C G Rich, Prof A J Richards, P D Sell, Dr A J Silverside, L M Spalton, Prof C A Stace, N F Stewart, Prof G A Swan, P J O Trist, Ms S D Webster, D Welch, Dr P S Wyse Jackson.

1. Introduction

Although this *'short Flora'* is in one sense a stand-alone volume, in another sense it is the second part of a two-volume report on Berwickshire's flora of which the first part was the *Berwickshire BSBI Botanical Site Register* (CBSR) circulated in 2013.

By recognising that many queries are site-related rather than species-related, the CBSR built on the BSBI concept of a County Rare Plant Register (CRPR), where all known populations of species that are rare or scarce in the county are listed by species. A CRPR had already been issued for Berwickshire in 2004, so the CBSR carried this logic forward by presenting the data by sites within hectads, not by species, and by including axiophytes (habitat indicator species) alongside the rare or scarce species. An overview of each hectad was followed by a table of sites and by individual site accounts illustrated by maps. The sites were graded by their perceived botanical value. The circulation of the CBSR included fellow naturalists, but was more particularly directed at governmental and charitable organisations with a stake in the conservation management of Berwickshire. The circulation has been limited by the conditions of the Ordnance Survey licence for the maps, which was granted on a concessionary basis as long as no income was to be received from sales.

This *'short Flora'* is as much an expanded CRPR as a Flora as there are species accounts for only a limited selection of species, but, as in the CBSR, axiophytes and a few neophytes are included alongside the rare or scarce species. The species accounts are preceded by 'A botanical tour of Berwickshire' based on the hectad by hectad site accounts in the CBSR. In this way the 'short Flora' combines many of the benefits of a CRPR and a CBSR, but without the full detail of the underlying individual botanical records. A full check-list of the Berwickshire flora is also included. Some limited additional material is added in separate sections to supplement these, with a view to approaching the format of a full Flora as nearly as is possible in a book of manageable size.

The *'short Flora'* and CBSR mark the completion of the latest resurvey of Berwickshire, the culmination of the author's 35 years of botanical recording in the vice-county. This continuity has been a great help in the search for evidence of change in the flora, which is a theme that runs through the book.

Unlike the CBSR, the *'short Flora'* includes English names for the plants alongside the Latin names. It is hoped that this will enable a wider readership to be engaged, contributing to the dissemination of our knowledge of the flora of Berwickshire and how it is evolving in response to an ever-changing environment.

Michael Braithwaite

July 2014

How to use this book

Concept

This ‘*short Flora*’ has four main sections, cross-referenced to each other:

- A **Botanical tour** of Berwickshire, arranged by hectad
- The **Changing flora** of Berwickshire, with sub-sections as listed on the contents page
- **Species accounts** for 415 selected species, arranged alphabetically
- Alphabetical **Check-list** of the flora.

Each main section begins with explanatory notes.

There are a number of additional sections as listed on the contents page.

To find information on a species

- Look up the species in the alphabetical ‘Check-list’, using the English-Latin index first if necessary
- If the species entry is highlighted in **bold**, look up the species in the ‘Species accounts’ section. Some hybrids are only mentioned under one of the parent species.
- If the text in the species account includes localities of interest, use the two-digit hectad reference beside the locality name, together with the ‘Index of hectad descriptions’ at the back of the book, to find the relevant site account in the ‘Botanical tour’
- If the species entry is highlighted in **blue bold**, look up the species in the appropriate sub-section of the ‘Changing flora’ section.

To find information on a site

- Use the two-digit hectad reference, found if necessary from the map of Berwickshire on page 9 together with the ‘Index of hectad descriptions’ at the back of the book, to find the relevant site account in the ‘Botanical tour’
- If there are species of interest at a site, look them up as above. Most, but not all, of the species mentioned in the ‘Botanical tour’ are those selected for the ‘Species accounts’ section, so there is an option of turning directly to a species account without first referring to the ‘Check-list’.

Explanatory note on the coverage of field surveys

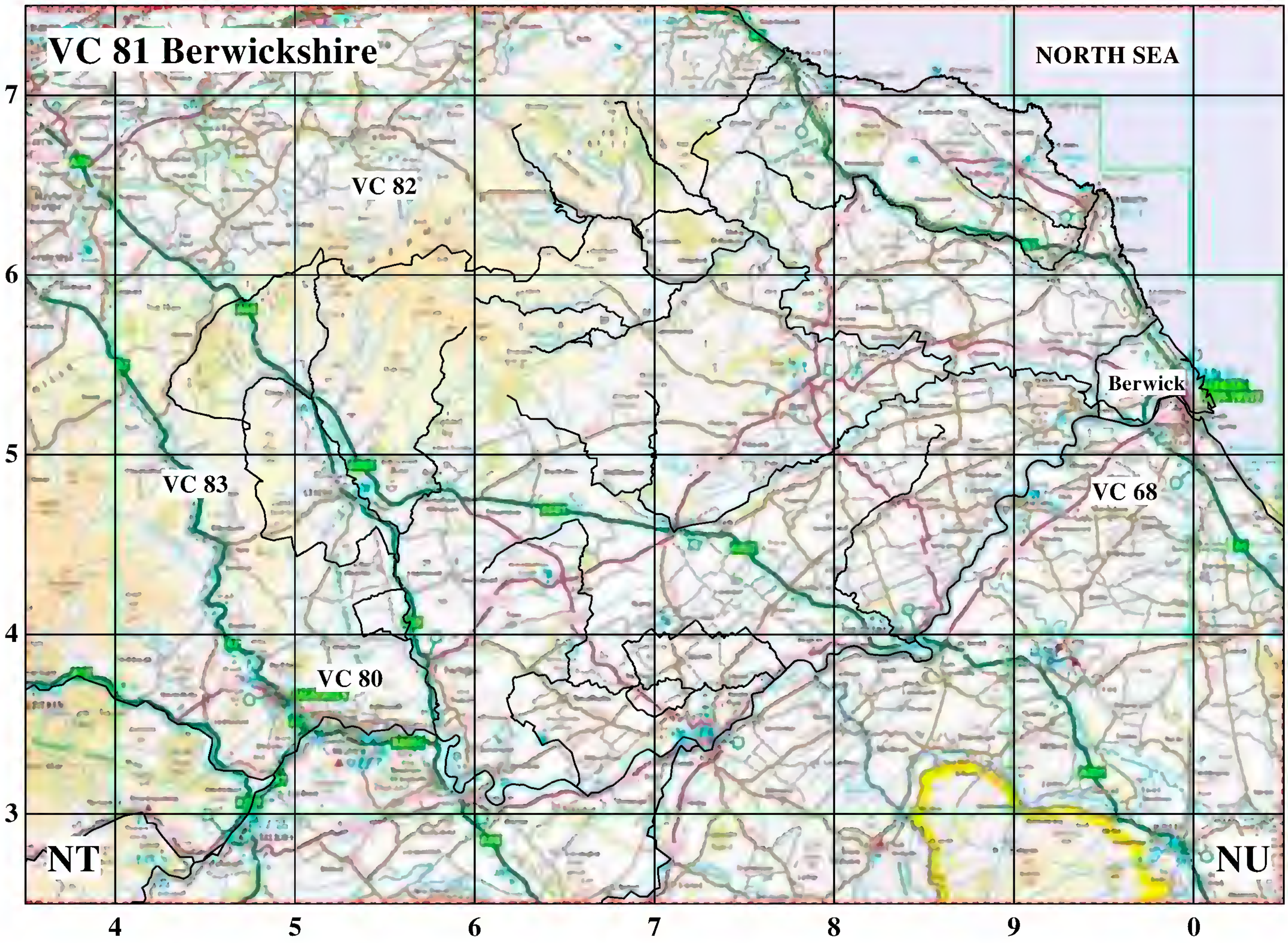
The coverage achieved by the field surveys is far from complete. No attempt has been made at any period in time to record a species list for every monad (1km square) in Berwickshire. Instead a sample approach has been adopted, focussing particularly on sites that appeared likely to hold habitats of interest. There have been two recent surveys, 1987-1999 and 2000-2013. The 1987-1999 survey with 39,941 records was less intensive than the otherwise similar resurvey 2000-2013 with 72,988 records. One of the consequences of sample coverage is that the distribution maps of the more widespread species are rather incomplete, portraying an unduly patchy distribution.

Definitions of scale

NT – defines the 100x100km square of the National Grid in which Berwickshire falls
Hectad – 10x10km square of the National Grid
Monad – 1x1km square of the National Grid

2. Summary maps

County map

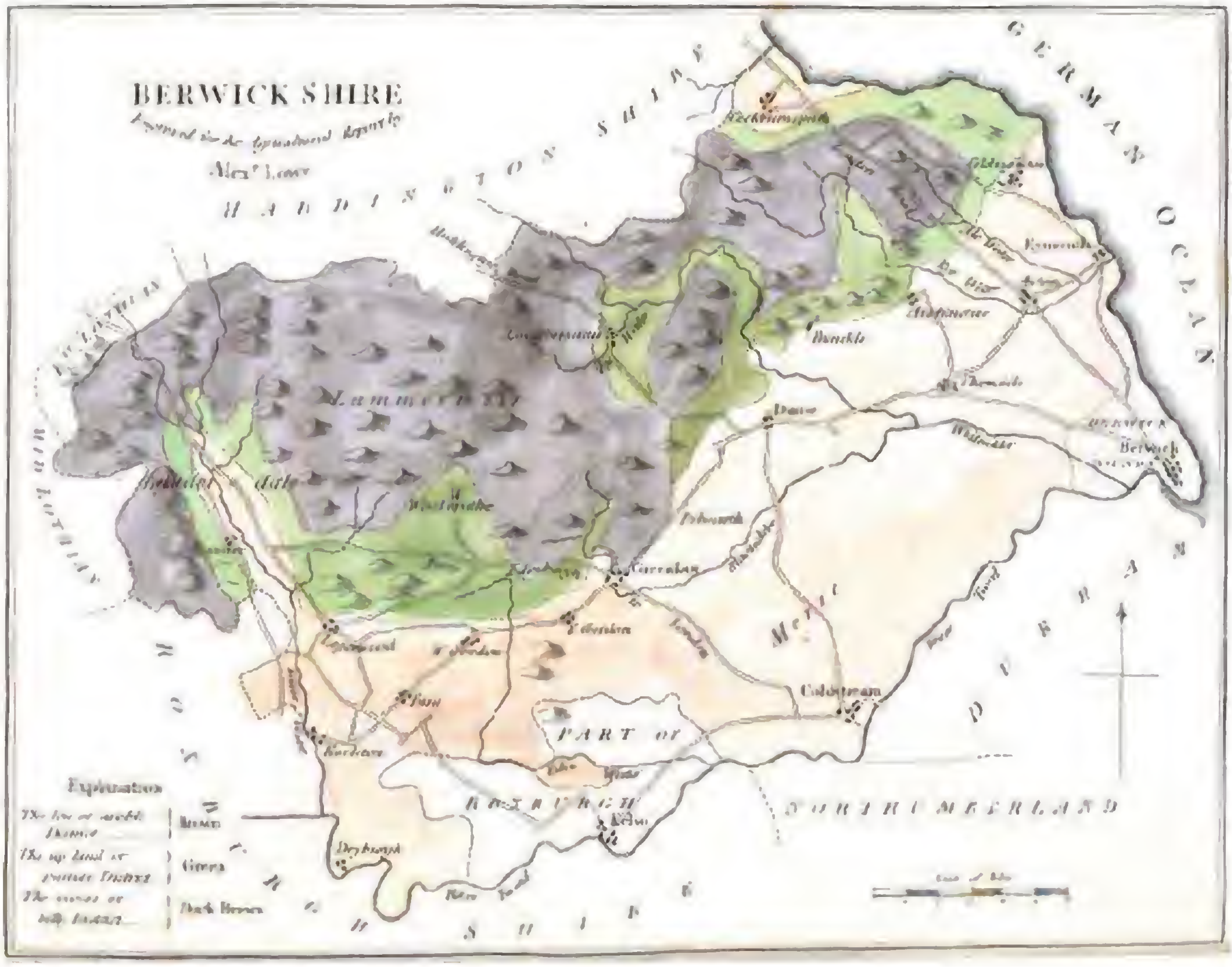


The maps in this section have ben prepared using DMAP © Dr Alan Morton. This map contains Ordnance Survey OpenData

Broadly speaking, Berwickshire occupies the lower part of the Tweed Valley to the north of the River Tweed with North Northumberland to the south. It is bounded in the east by the North Sea, to the north by the ridge of the Lammermuir Hills, separting it from East Lothian and Midlothian, and in the west by the Leader Water, separating it from Roxburghshire.

Berwick upon Tweed and the surrounding land is in England, leaving Duns as the county town of Berwickshire, though Eyemouth is the largest town. An enclave north of the Tweed around Kelso is in Roxburghshire. Conversely there are enclaves west of the Leader Water that are in Berwickshire. The principal rivers are the River Tweed, the Whiteadder Water with its tributary the Blackadder Water and the Leader Water. Smaller tributaries are the Leet Water joining the Tweed at Coldstream, the Eden Water joining the Tweed above Birgham and the Dye Water running through Longformacus before joining the Whiteadder. The Eye Water with its tributary the Ale Water form a separate catchment reaching the sea at Eyemouth.

Historical map 1794

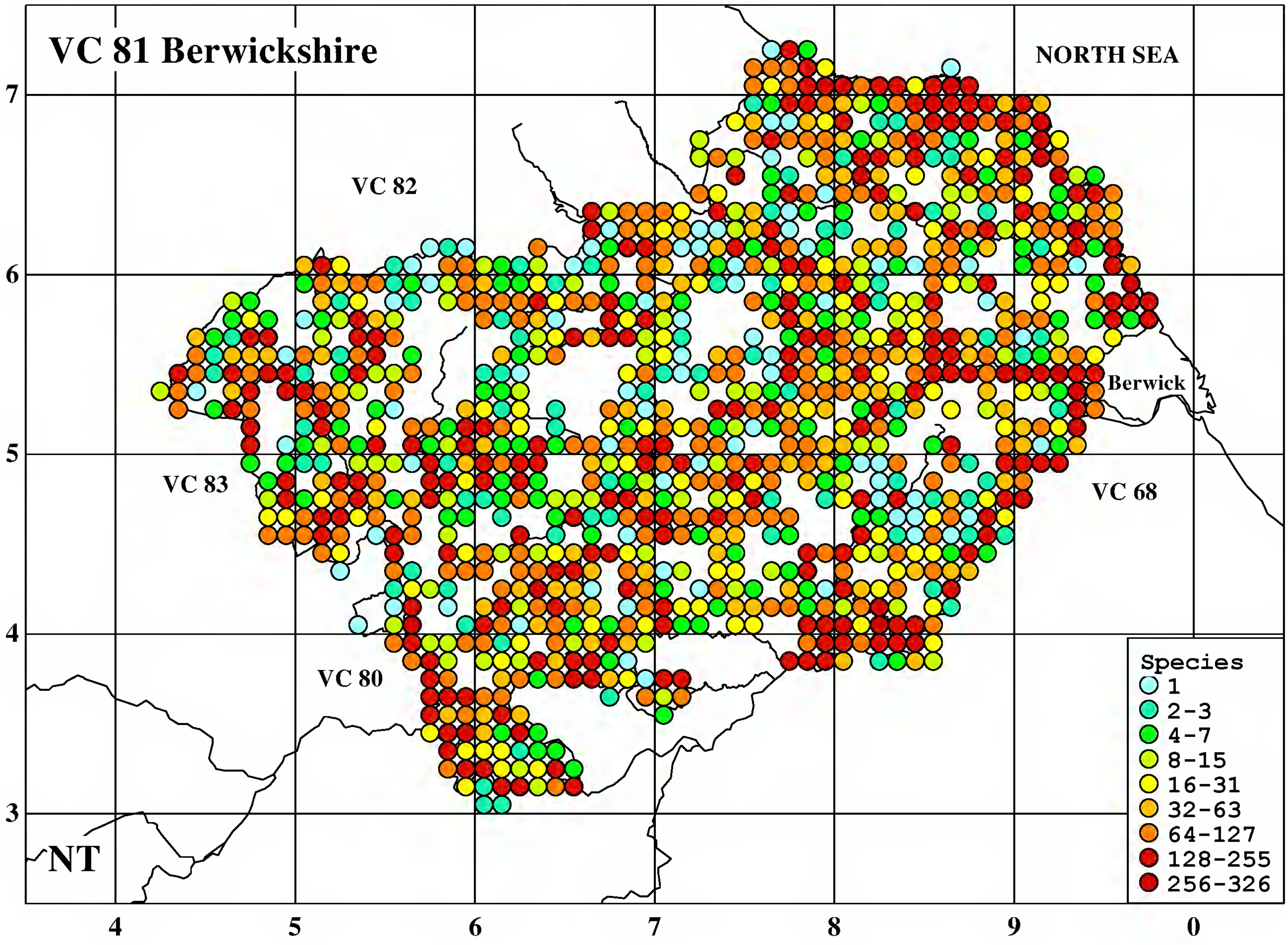

BERWICK SHIRE
Alex.r Lowe
HADDINGTON SHIRE
GERMAN OCEAN
Lammermuir
Merse
Coldstream
Berwick
PART OF
ROXBURGH
NORTHUMBERLAND
Kelso
Dryburgh
Explanation

Map taken from Alexander Lowe's *General view of the agriculture of the county of Berwick*, 1794

The historical map illustrates the division of Berwickshire between the fertile arable land of the Merse and the moorland of the Lammermuir Hills with permanent grass in between.

Note the former counties of North Durham (now part of north Northumberland) and Haddingtonshire (now part of East Lothian). The historical Berwickshire boundary is close to that of the vice-county.

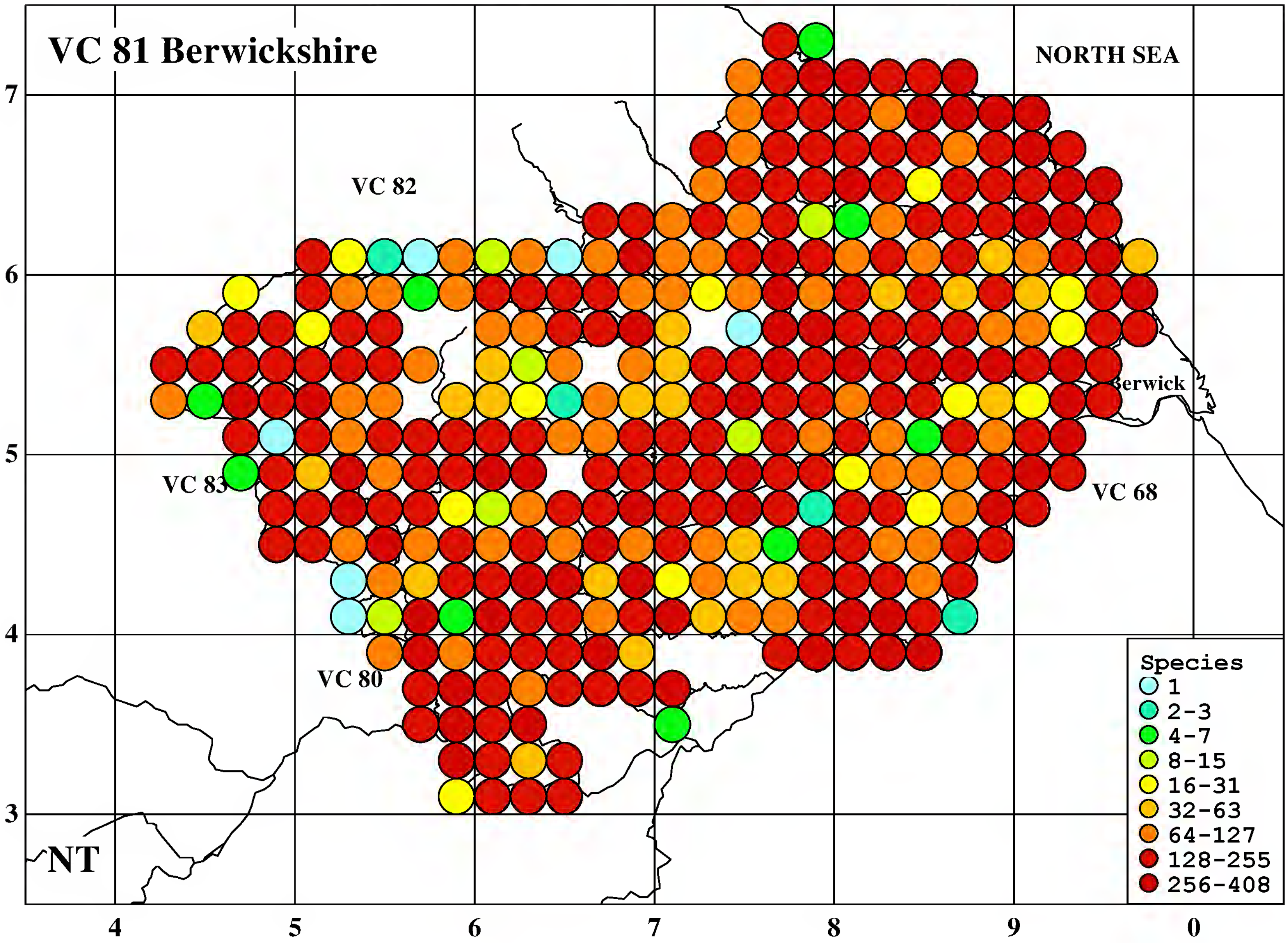
Species Diversity 1987-2013


VC 81 Berwickshire
NORTH SEA
VC 82
VC 83
VC 80
VC 68
Berwick
NT
Species
1
2-3
4-7
8-15
16-31
32-63
64-127
128-255
256-326
7
6
5
4
3
4
5
6
7
8
9
0

The map of species diversity underlines the limitations of the Berwickshire surveys. Survey has been on a sample basis, so, although there has been a strong emphasis on seeking out all habitats of botanical interest, there has been no attempt at complete coverage.

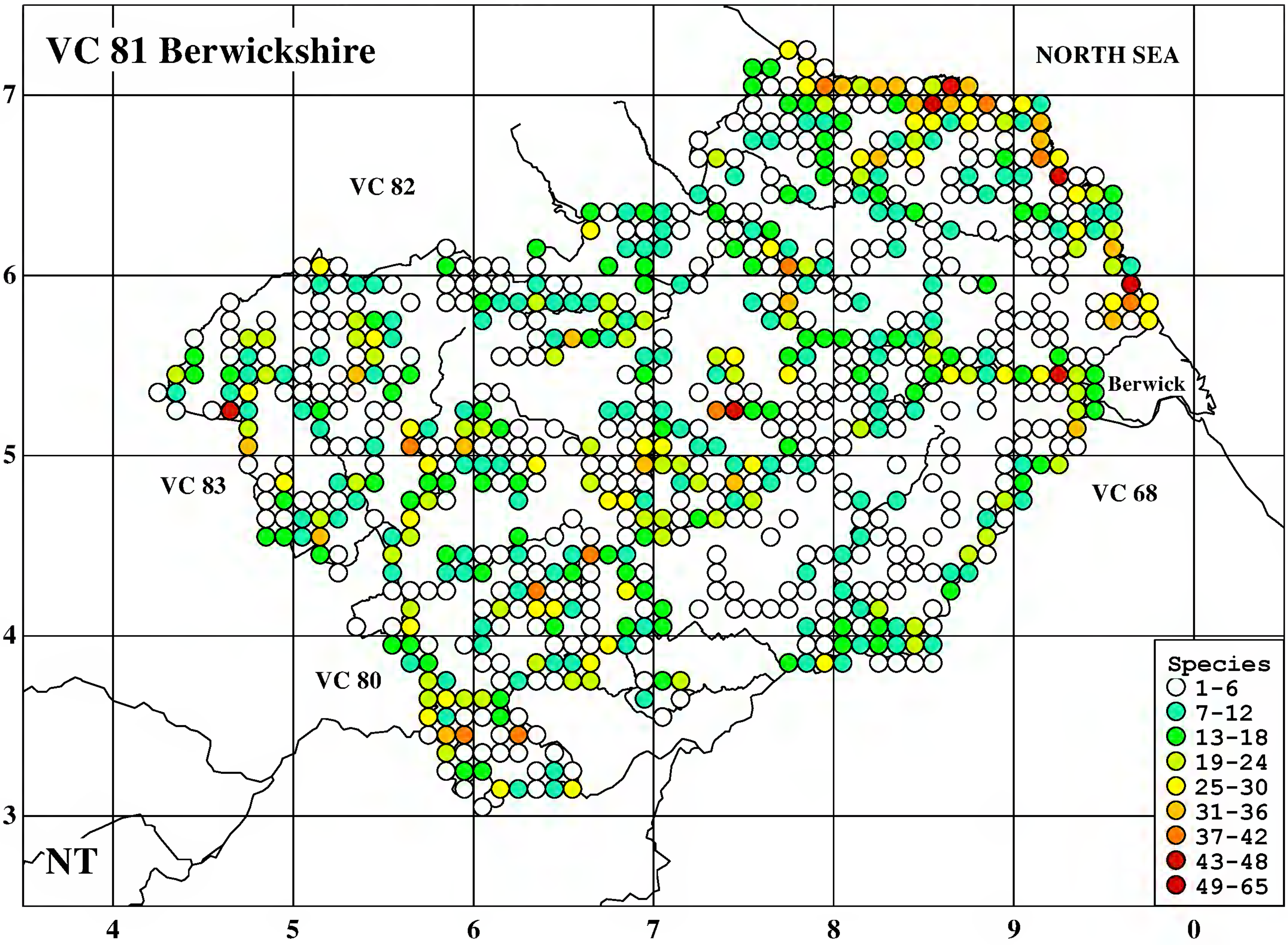
Coverage is almost complete along the coast and the river corridors. In the Merse gaps in coverage are just that. In the hills they reflect in part the way hill burns were recorded. One recording card was completed per burn with the records ascribed to the monad where most of the records were made, normally near the foot of the burn. Additional species found in other monads higher up the burn and on the open hill were not differentiated unless they were for notable species, when a precise GR was taken. So the large gaps in coverage in hectads 55, 65 and 75 are somewhat illusory. Nevertheless some blocks of hill land are indeed unrecorded.

Tetrad Species Diversity 1987-2013


VC 81 Berwickshire
NORTH SEA
VC 82
VC 83
VC 80
VC 68
erwick
NT
7
6
5
4
3
4
5
6
7
8
9
0
Species
1
2-3
4-7
8-15
16-31
32-63
64-127
128-255
256-408

The tetrad map of species diversity demonstrates that coverage is much more nearly complete at tetrad scale than at monad scale. Nevertheless it is inadequate for any very meaningful statistical analysis, as only a modest number of the tetrad species lists are reasonably complete and there is much variation in the relative completeness of the remainder.

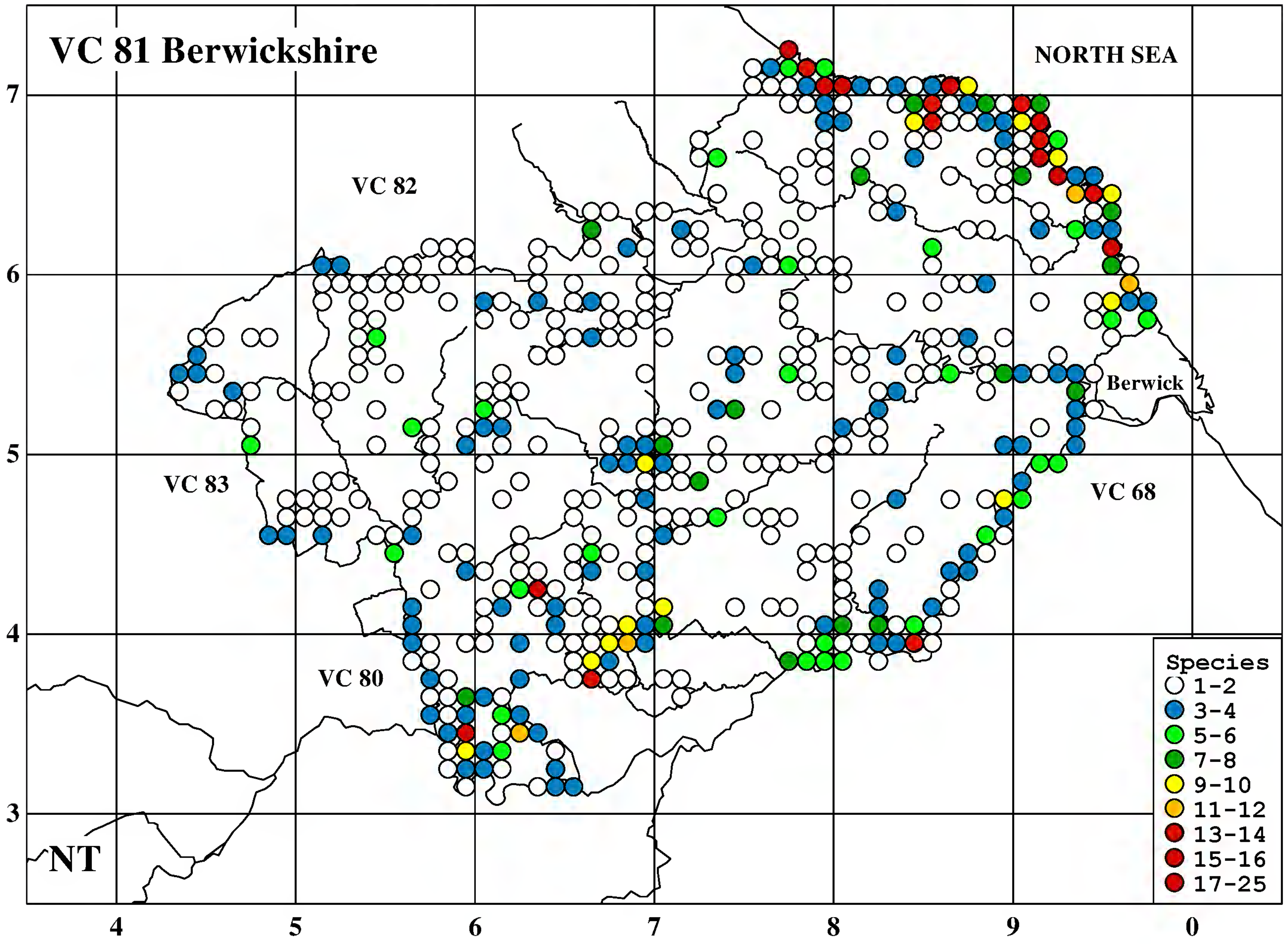
Axiophyte Species Diversity 1987-2013


VC 81 Berwickshire
NORTH SEA
VC 82
VC 83
VC 80
VC 68
Berwick
NT
7
6
5
4
3
4
5
6
7
8
9
0
Species
1-6
7-12
13-18
19-24
25-30
31-36
37-42
43-48
49-65

The map of axiophyte diversity emphasises the relative botanical richness of the coast and the river corridors. There are pockets of interest elsewhere in the hills but very few such pockets of interest in the Merse.

Monads with green ‘dots’ may be of almost as high botanical interest as those with red ‘dots’ but with a much narrower range of habitats. A multiplicity of habitats is one reason for the richness of the coastal strip.

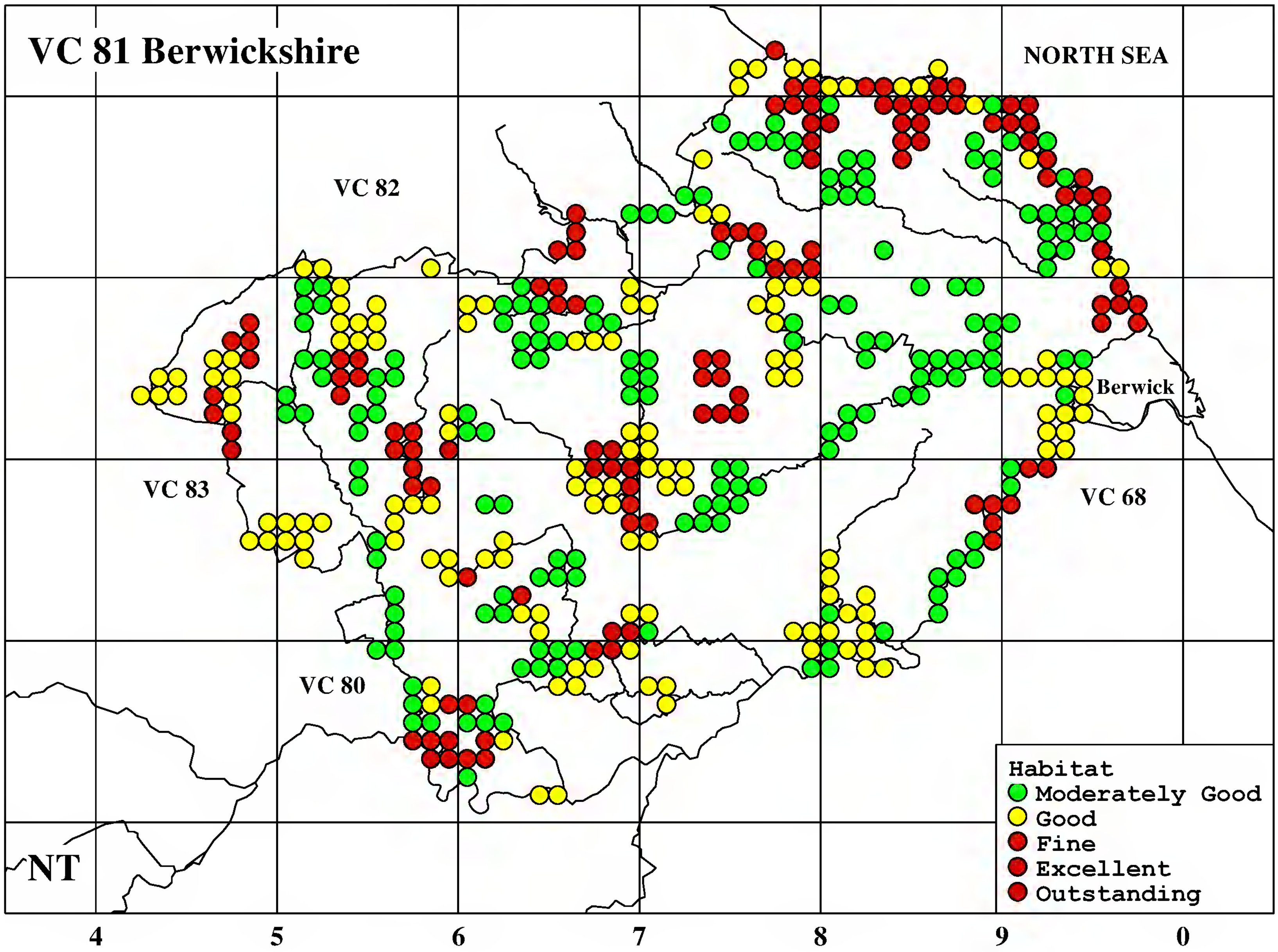
Rare or Scarce Species Diversity 2013


VC 81 Berwickshire
NORTH SEA
VC 82
VC 83
VC 80
VC 68
Berwick
NT
Species
1-2
3-4
5-6
7-8
9-10
11-12
13-14
15-16
17-25
3
4
5
6
7
8
9
0

The map of rare or scarce species diversity based on populations thought to be extant in 2013 gives a good perspective on the paucity of species-rich botanical habitat in Berwickshire. Nevertheless criteria that dismiss species of high conservation interest soley because they are not scarce is bound to lead to contradictions.

The preeminence of the coastal strip is strongly emphasised. The River Tweed scores higher than the other river corridors because of its richer aquatic flora. Other prominent features are the grasslands on the Kelso Traps in hectads 63 and 64 and the Dogden Moss complex at the join of hectads 64, 74, 65 and 75.

Sites of Botanical Interest 2013

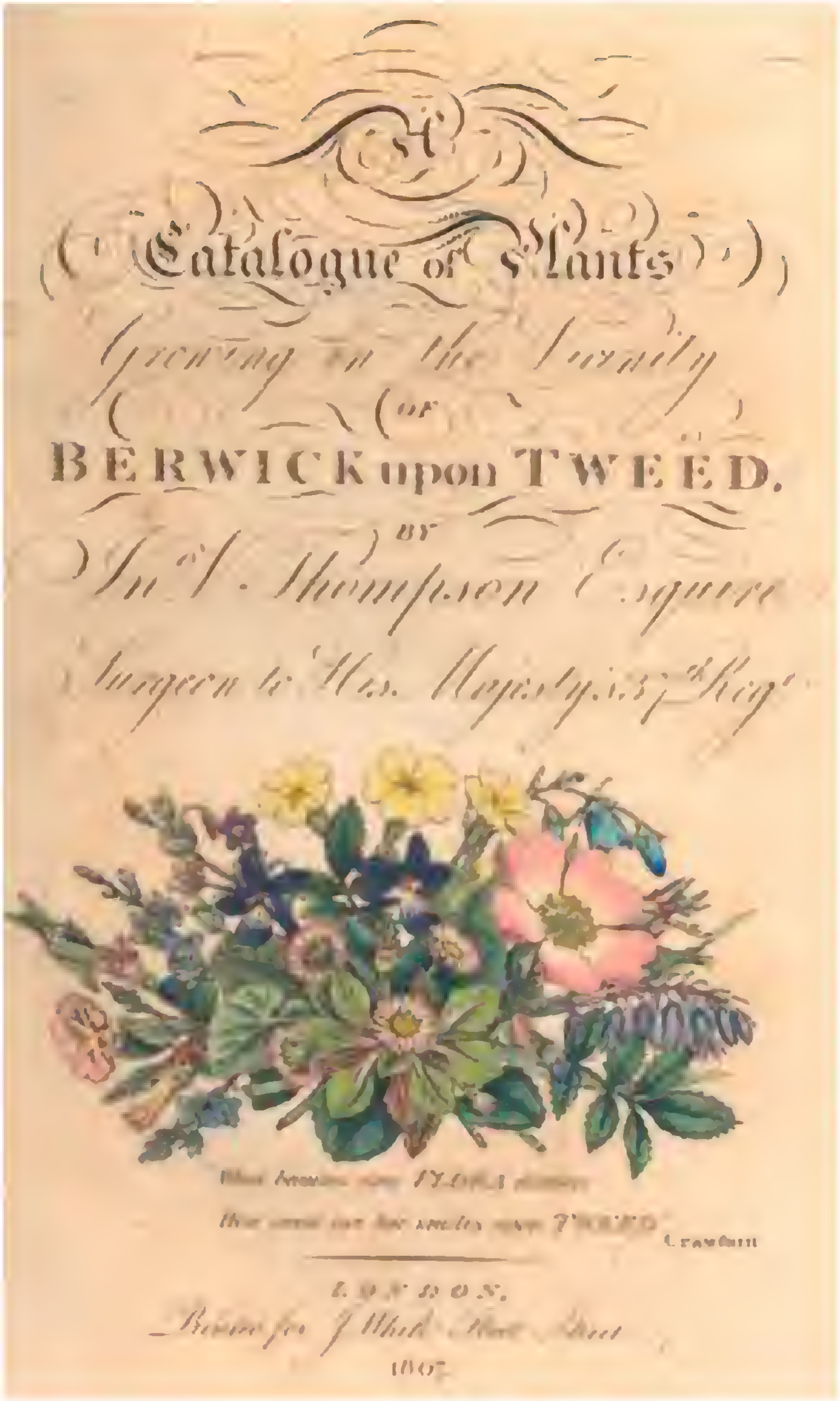


The map of sites of botanical interest gives a flattering impression of the extent of good habitat in Berwickshire. This is an effect of the 1km recording scale. If even a small corner of a site falls in a monad it is coloured with the grade of the site as a whole.

Nevertheless the main areas of botanical interest stand out clearly. From east to west these are: the whole of the coastal strip with adjacent inland habitat at Lumsdaine Dean 86 and Pease Dean 76, the oakwoods at Abbey St Bathans 76, the wetland complex around Hells Cleugh near Duns 75, Killmade Burn 66, the grasslands of the Dye Water 55, Dogden Moss, Fangrist Burn and Greenlaw Dean 64, Hareheugh Craigs 63 and 64, Cromwells, Wheel Burn and the Blythe Water 54 and 55, the juniper and *Sedum villosum* Hairy Stonecrop flushes of the hill burns in 55, Gledswood and Gaitheugh 53, Longmuir Moss 45. The river corridors also stand out, but their botanical interest is rather dispersed, with notable examples at Fishwick Mains on the Tweed 94 and Tibbie Fowler's Glen on the Whiteadder 95.

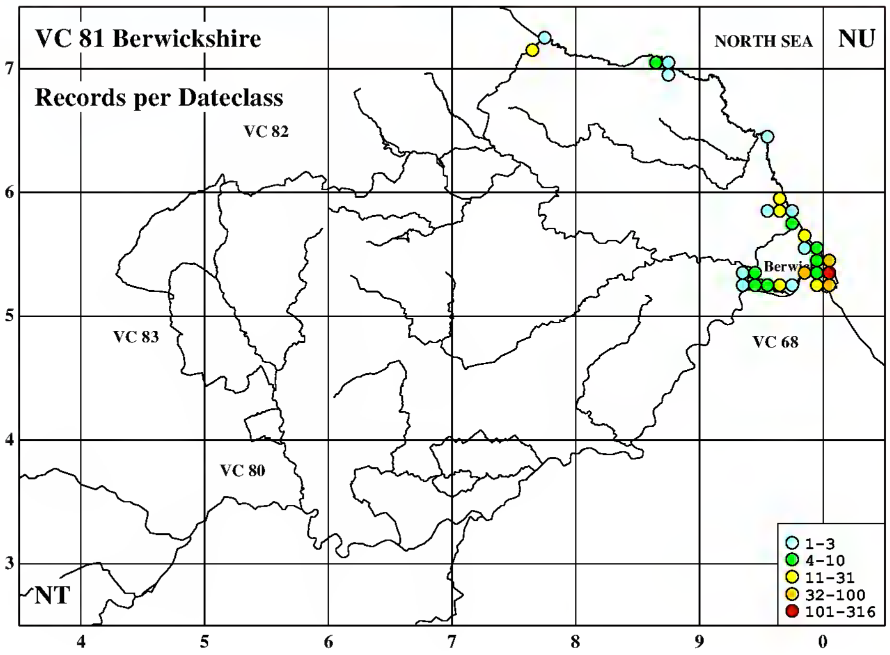
Compared to the map of rare or scarce species the river corridors score lower as do the grasslands on the Kelso Traps in hectads 63 and 64, while the preeminence of the coastal strip is a little less strongly emphasised.

3. The history of botanical recording in Berwickshire



A Catalogue of Plants
growing in the Vicinity
of
BERWICK upon TWEED.
by
Jn. V. Thompson Esquire
Surgeon to His Majesty's 37th Regt.

LONDON,
Printed for J. White Fleet Street
1807



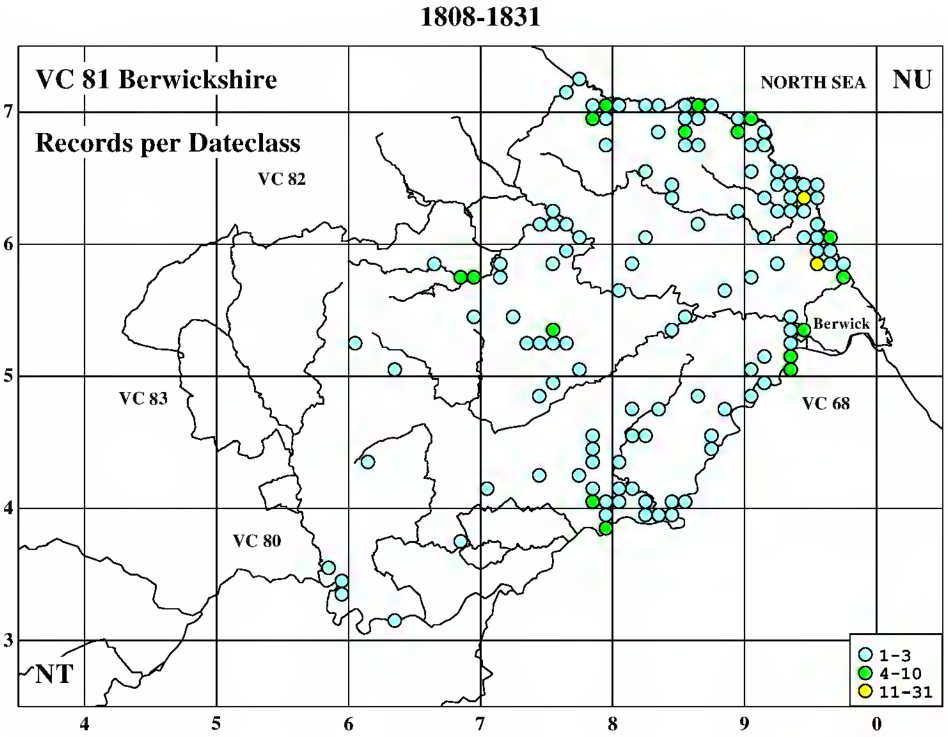
1740-1807

The first local flora in the area was by John Vaughan Thompson, 1779-1847, who collected wild flowers around Berwick as a teenager. He trained in medicine at Edinburgh and in 1798 he went as an army surgeon to Barbados. On his return he was given introductions to Dr J E Smith FRS (later Sir James) founder of the Linnean Society of London and James Sowerby, the two leading botanists of the day. With their encouragement he published his *Catalogue of Plants growing in the Vicinity of Berwick upon Tweed* in 1807. He moved to Cork in Ireland where he took up the study of marine biology with much success. It was he who found that by using a muslin bag small marine organisms could be collected and so he opened the world of plankton to the naturalist. In 1835 he accepted the post of Deputy Inspector General of Hospitals in New South Wales, where he remained. Thompson's *Catalogue* seems, by virtue of its obvious incompleteness, to have played a key role in starting off George Johnston, 1797-1855, on his quest for knowledge.

Like Thompson, Johnston was given a detailed introduction to botany during his medical studies in Edinburgh, as it was an obligatory part of the course at that period, and thus came to develop a childhood passion for wild plants. He was influenced not only by his Edinburgh peers and the publication of Robert Greville's *Flora Edinensis* in 1834 but also, as was Thompson, by the publication by Nathaniel Winch in Newcastle of *The Botanist's Guide through Northumberland and Durham* in 1805. Johnston finished his diploma in 1817 at the age of 20, though his connection with Edinburgh continued, and he probably embarked on his *Flora* about then, with the clear intention of emulating Greville and Winch and of filling a geographical gap between the two.

When the Plinian Society was formed in Edinburgh in 1823, as an association of students in the sciences, Johnston became a member along with the three Baird brothers who became his friends. The Bairds were the sons of a

Berwickshire minister whose widow had moved to Edinburgh. Andrew Baird was the first president of the Plinian Society and, as the keenest botanist, was the closest to Johnston. He was destined for the church and was to botanise with Johnston for several years before he became minister of Cockburnspath in 1831, where, with Johnston building a medical practice in Berwick, he was in theory ideally situated to continue to collaborate on the botany of Berwickshire but in practice was soon too busy to do so and, sadly, died in 1845 when still in his 40's.



Johnston's *Flora of Berwick-upon-Tweed* was printed by Mr Neill, apparently the Patrick Neill who was one of the most prominent Edinburgh botanists, and published in two volumes in 1829 and 1831. It was based on the localities of the plants in Johnston's herbarium, plant descriptions and pithy extracts adapted skilfully from the published floras and all too little of the wonderfully observant field notes of Johnston himself (there would be more of these in his *Natural History of the Eastern Borders*, 1853). Johnston's plants were collected by Andrew Baird and himself with some useful contributions from other friends, mainly fellow medical men.

Johnston's perception of his work is known through a letter to Winch in 1828 held by the Linnean Society of London, to whose librarian I am indebted, in which he wrote – 'Though not a member of the Newcastle Botanical Society nor previously known to you, yet as a student of that science in which you are so distinguished, I take the liberty of enclosing a short commentary which I shall feel obliged by your laying before' – this was a paper on *Melampyrum* Cow-wheat, but he continues – 'Will you permit me the liberty to mention that I have some intention of publishing a flora of Berwick upon Tweed with short descriptions of the species & an account of their uses in agriculture, medicine, the arts etc. - their uses in the superstitions of former times, with illustrations from our Poets to render the study (if I can) a little more popular in this neighbourhood than is. I need not say that Thompson's Catalogue is exceedingly defective, sometimes erroneous. Any communication from you illustrative of my subject I would esteem a very great favour.'

The practice of collecting for a herbarium was taught as a key discipline in Edinburgh where students competed for a prize in which their collections were critically assessed for the accuracy with which their plants were named. Collecting for a herbarium was thus almost exclusively how field botany was practiced in the nineteenth century. It was a necessary practice in the absence of photography and fully reliable identification books but, while mainly innocuous, it did lead to the most dreadful plundering of rarities, much exacerbated by the practice of collecting duplicates to swap with one's friends. Johnston writes to Winch in 1828 'I have been in the habit of picking only one specimen or two of the plants I have met with, a practise I have this summer more than once had occasion to regret, & never more so than now. Fortunately however I have by me a few of *Scilla verna* [Spring Squill] and 2 small ones of the *Rhodiola* [*Sedum rosea* Roseroot], but you can form no idea of the luxuriance which the latter attains on the coast of Berwickshire from the enclosed specimens. It grows all along the coast from 4 miles north of Berwick to Fast Castle, in general sparingly, but in a ravine between St Abbs Head and the Castle in the utmost profusion.' This is not too unbalanced an approach but the underlying pressures are all too clear. Field botanists still collect today, but much more selectively and with due regard for conservation, as problems with identification still abound and a voucher specimen often remains the only way to establish a record of a critical taxon beyond doubt.

George Johnston

Before the *Flora* was finished Johnston was fully immersed in his flourishing practice and had next to no time for field botany. Indeed he was all too conscious of this and of the limited area that he and Baird had been able to botanise and endeavoured to solicit specimens from his widening circle of friends. He wrote to Winch in 1829 ‘Had I adhered to my original plan of confining myself within 10 or 12 miles (of Berwick), the enumeration of species would have been tolerably complete, but after a sheet or two had been printed off, I was induced by my friend Mr Baird to embrace the whole of Berwickshire. The consequence is, I have no doubt, that many species remain to be added. These will form an Appendix to the 2d volume.

During the ensuing summer I intend to confine my researches in a great measure to Berwickshire. I shall among other things endeavour to make a tour of 8 days along the Lammermuirs, & as they have never been examined by anyone, I have hope of finding some rarities among the bogs and recesses.’ This projected tour was to be curtailed by pressure of work.

It was in these circumstances that the formation of the Berwickshire Naturalists’ Club arose so naturally and it was undoubtedly influenced by the Plinian Society which, from 1825, had included at least occasional field excursions in its programme. Johnston realised that even a limited number of Club meetings would do wonders to stimulate the study of natural history and to promote collaboration. Of the Club’s formation Johnston writes to Winch ‘September 22, 1831. Yesterday, *we* the Naturalists of Berwickshire, held a meeting for making an excursion in common, & a fine day we had of it. We added *Pulmonaria maritima* to our county list, *Peplis portula* and *Stachys ambigua.* No bad day’s work. [These are *Mertensia* Oysterplant, *Lythrum portula* Water Purslane and Hybrid Woundwort] We were so pleased with our ramble that before we parted we founded ourselves in a Club for the purpose of investigating the Natural History & Antiquities of the county - nine names are subscribed already to the rules of this Club. I hope it will increase. At the meeting the *Sison amomum* [Stone Parsley] was announced as having been found in the neighbourhood of Coldstream for the first time in Scotland, & there is no doubt about it, as some days before I had got recent specimens from that station.’ It is curious that this letter, perhaps by a slip of the pen, seems to imply that the Club was founded on a Wednesday, one day earlier than that recorded in its *History*, a day that would agree with the decision made for future meetings to be on Wednesdays.

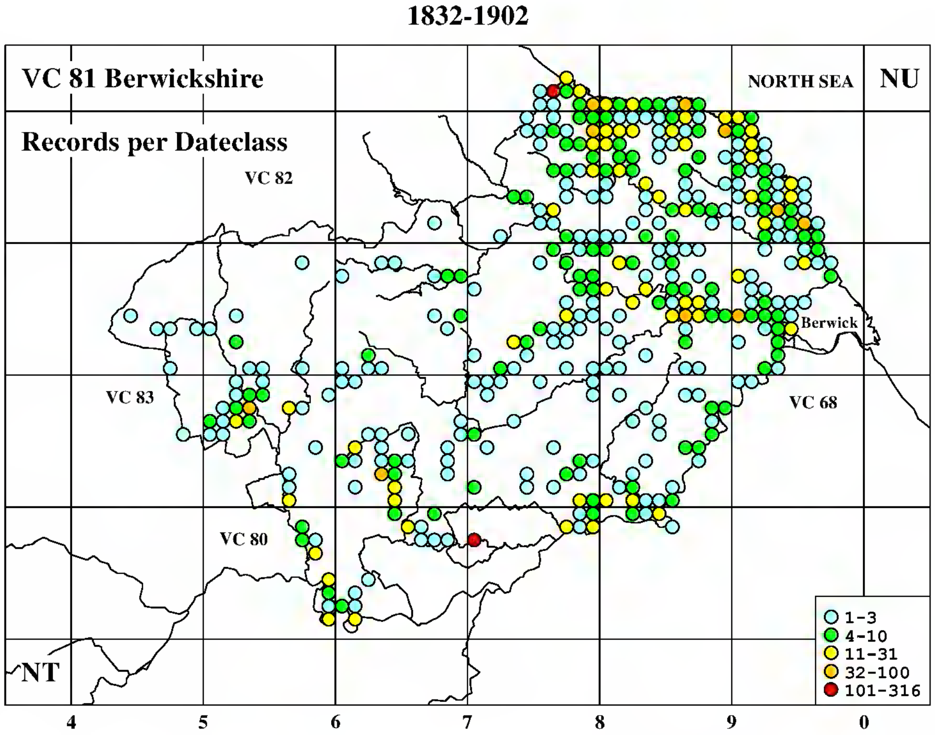
But even at this auspicious moment business intrudes, for he continues ‘Today I have just received from the neighbourhood of Wooler *Bidens tripartita* [Trifid Bur-marigold] & a mint which I have never seen before but which I have not leisure to examine. Indeed I am at present so perpetually interrupted & on the tenter-hooks that I find my mind fixed to nothing but patients and I will no sooner have closed this letter than I will remember many things now forgotten & which I had intended to have mentioned.’

Johnston’s commitments are underlined in subsequent letters to Winch. In March 1834 he writes ‘I send you a copy of the first no. of the proceedings of the BN Club and a copy for your Philosophical and Literary Society. Indeed I cannot now spare time for walks - I work away at natural history before breakfast and in

the evening - a closet naturalist - but the day I must devote to other objects.' Again in October 1835 he writes 'I have not been from home, not even for a day, during the summer. I have therefore nothing to tell you of my botanical discoveries.' In fact it had not been quite as bad as that: the *History* of the Club records that Johnston was faithful in attending the meetings of the Club that year and had botanised with them at Allanton, from Pease Bay to Siccar Point and further afield at Redpath Dean near Earlston.

The stage was now set for others to contribute to the botany of Berwickshire: Johnston had given them a *Flora*, the Club with its field meetings and its *History*, and himself as a 'closet naturalist' able to referee their finds. It was to prove to be a system that would work well, albeit with some fits and starts, for the rest of the century given that one of Johnston's protégés, James Hardy, was trained and on hand to take over the care of the Club after Johnston's death in 1855.

The botanical records in the Club's *History* are largely selections from the botanising of individuals, rather than reports of Club meetings, and then, as now, there was space only for what was considered most notable. Some sadness was inevitable with this policy: thus it is clear that long plant lists were submitted to Johnston by, in particular, Miss Elizabeth Bell of Springhill with her friend Miss Hunter of Anton's Hill and by Rev Dr Thomas Brown of Langton, which, had they survived, would have been of interest today as they covered rather specific areas for which we have but few early records.



A few species were recorded frequently, not so much because they were widespread but because they have a charisma about them which ensures that the botanist who finds them values the record. This being so I have chosen to chosen the top 25 species, all of them scarce in Berwickshire, for more detailed analysis. Some 40 botanists contributed records of these species. It is no surprise that Johnston tops of the list nor that Hardy and Andrew Baird follow. Charles Stuart (1825-1902) was a notable botanist, horticulturalist and general naturalist who was much travelled and contributed to several learned societies. He found an enigmatic heath in Ireland now known as the hybrid *Erica x stuartii*. His contribution to the Club was immense. Andrew Kelly was a teacher who was a corresponding member of the Club and an excellent botanist who covered Lauderdale adequately for the first time. He collaborated with William Shaw to produce an account of the flora for *Lauder and Lauderdale*, 1902, though it is not as good an account as it might have been as rather few detailed localities are given. Alexander Carr was an exceedingly promising young man in many disciplines who wrote *A History of Coldingham Priory* at the age of 25, which includes a chapter on botany, but he was soon lost to the Club when he entered the navy at the age of 26 and died but two years later. Several other contributors were good botanists but moved away or had always lived outwith the county and their contributions reflect this: such were Dundas Thomson, George Macfarlane, Francis Douglas, William Baird, Andrew Brotherston, John Vaughan Thompson, William Boyd, Arthur Evans and Prideaux Selby. Thomas Brown and Elizabeth Bell have been mentioned above. William Wood was the gardener at Newton Don and his plant list did find a place in the *History*, though it was severely edited by Hardy.

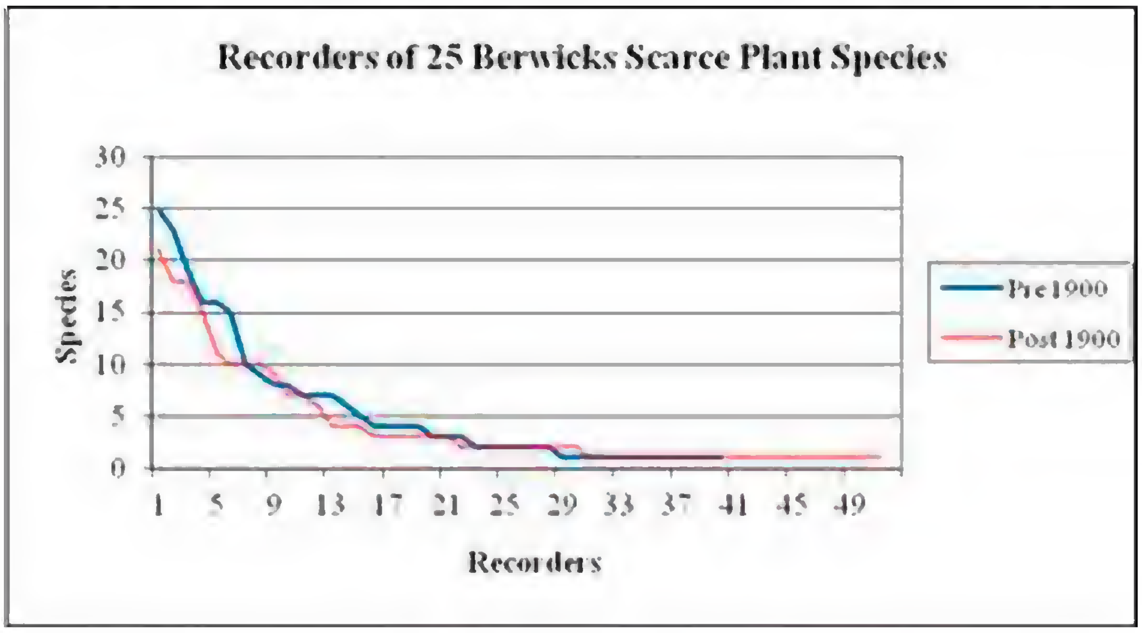
But, as has already been mentioned, some Club members were happy to see the plants for themselves and to build up their herbaria and were not especially interested in adding new localities. One such was another of the Club's presidents, Commander Francis M Norman 1833-1918, who was invalided out of the navy to North Berwick before moving to Cheviot House, Berwick, where he botanised with Rev James Aiken. He had a special interest in education as chairman of the governors of Berwick grammar school and donated his herbarium to the Berwickshire High School in Duns whose natural history activities he refers to with approbation in his anniversary address of 1908. Albert Long made frequent use of it when he was teaching at the High School in the 1950's and it is currently in my custody having been uplifted in 1993 by John Harrison, then the Region's natural history officer at Hawick Museum, as it was unused and in danger of being destroyed. Though of no special scientific or monetary value, it is a fine example of its kind and of considerable historical significance in the history of the Club.

Commander Francis M Norman

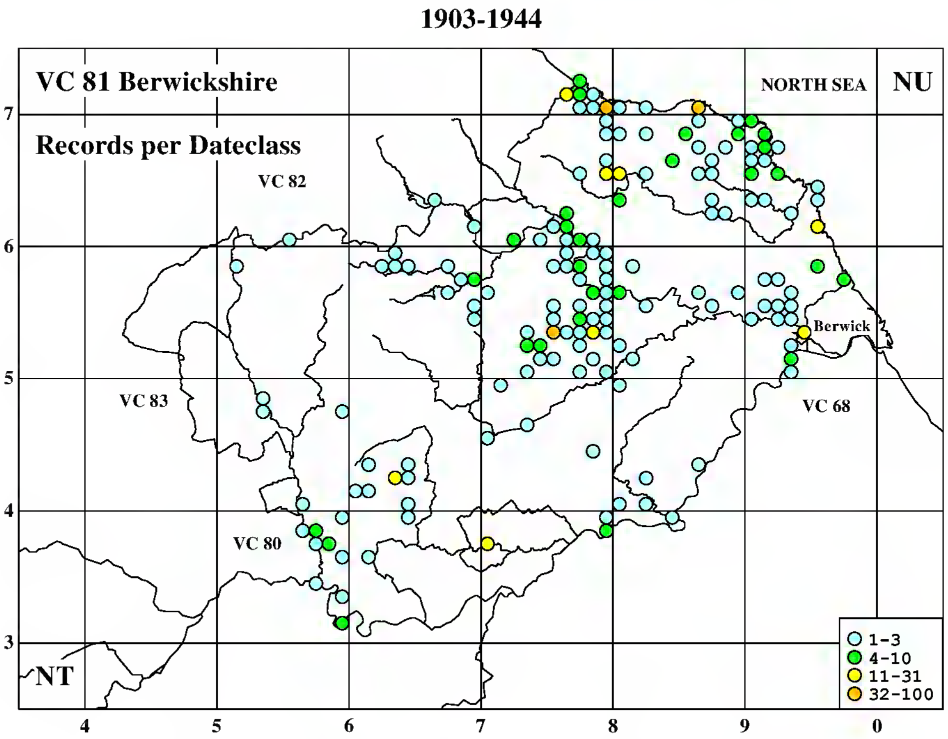
I have looked up my 25 Berwickshire specialities in this chest and find specimens of 23 of them. It is fascinating to see where Norman found them: 4 are from Berwickshire, 2 from Roxburghshire, 7 from the Lothians, 2 from Perthshire, 2 from Mull, 1 from Norfolk, 1 from Kent, 2 from Gloucestershire and a final 2 for which I have not located the place name given. The Berwickshire specimens are from well known localities: Gordon 64, St Abbs Head 96, Grantshouse 76 and Langtonlees 75, so there was no need to publish the records. The specimens were collected between 1873 and 1889, the great majority by 1876. Norman joined the Club in 1874.

The overall result of all this 19th century botanising was good: many different members of the Club interested themselves in the botany of the area and contributed at one time or another; and the coverage of the county was commendable given the limitations of transport, though far from exhaustive.

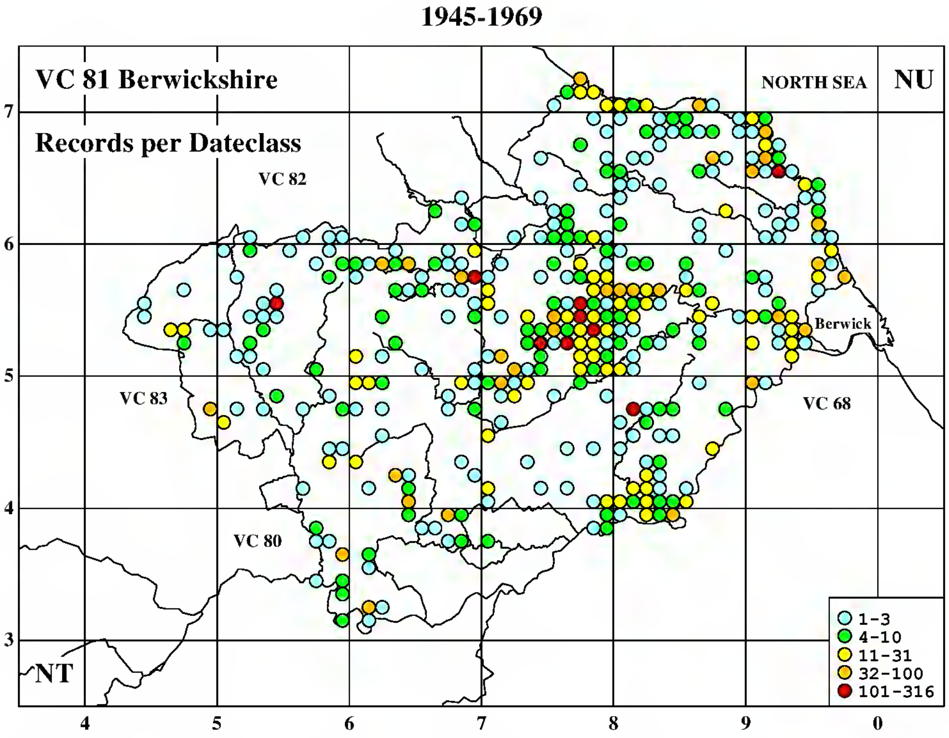
To see just how good the coverage had been it is instructive to carry out the same exercise for the 20th century. This I find involves 51 naturalists. Overall the contributions of the two centuries are remarkably similar not only in the number of records made but in the balance between those who have contributed many records and the larger number who have contributed a few records, though it must be understood that the later botanists have had a disadvantage with so many plant localities having been lost over the years and indeed 4 of the 25 species are now thought to be extinct in Berwickshire.



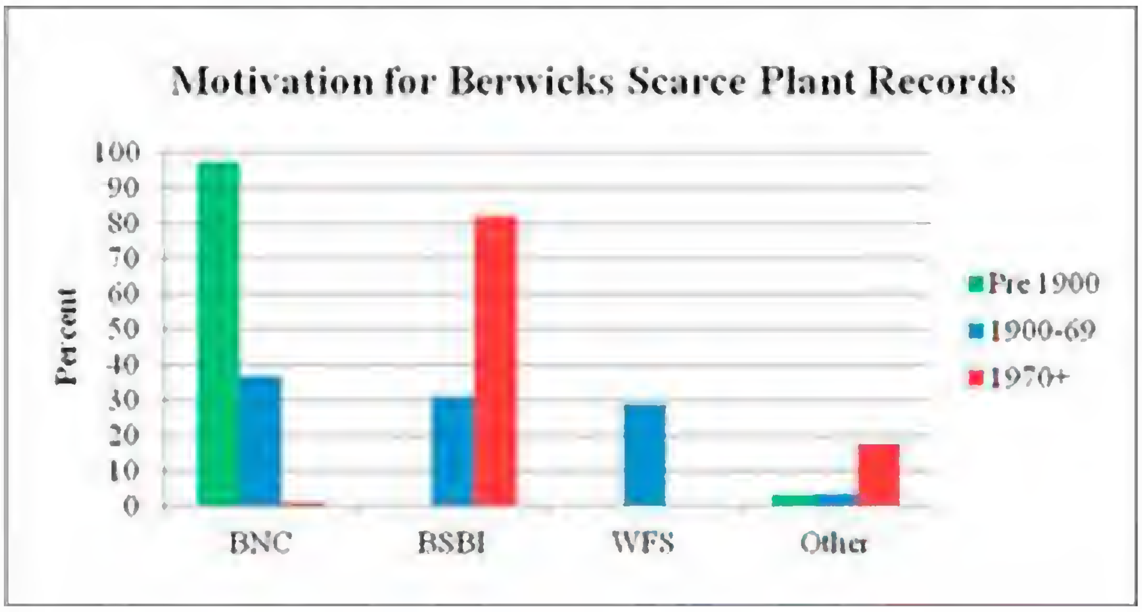
The 20th century falls for our purpose into four main periods, from 1900 to 1944, 1945 to 1969, 1970 to 1986 and 1987 to 1999. In the first period botanical recording was at a low ebb, with the work of the previous century continuing without much conviction, as the county was thought to be worked out with no new species to be found and there was little perception that the world had changed since 1831 and that a new inventory was sadly needed.



The second period saw the rise of the Wild Flower Society under which its members, who included a disproportionate number of ladies, kept an annual diary of their finds and had these judged on a competitive basis by geographical regions. This proved popular and the botanical skills of three Berwickshire ladies flourished as members: these were Miss Brown of Longformacus House, who had the benefit of a chauffeur (though I have been told that he did not think much of destinations in the countryside where he could not chat with the staff of those visited, as was usual), Mrs Swinton of Swinton House and her sister Miss Logan Home of Silverwells, who was more of a gardener. The three were friends though there was a clear botanical pecking order between them. I have a scrap of paper with one of Miss Logan Home's diaries that records the results for Branch W, Scottish Seniors: Miss Brown is top with 593 species, Mrs Swinton second with 503 and Miss Logan Home some way below. The scores tell as much about how widely the individuals had travelled as about their botanical skills. Their activities were interrupted a good deal by the war. Mrs Swinton was president of the Berwickshire Naturalists' Club's in 1960 and her address records that she joined the WFS in 1939 and tells of 'the greatest fun' she had in travelling all over Britain and Ireland looking for flowers. Although Mrs Swinton was a Club member from 1923 and was a frequent leader of its botanical field meetings, she submitted few records to the *History*. Mrs Pate of Horseupcleuch was less leisured but similarly enthusiastic and a member of both the Berwickshire Naturalists' Club and the WFS, which she joined in 1964. She accompanied Albert Long on some of his field excursions.



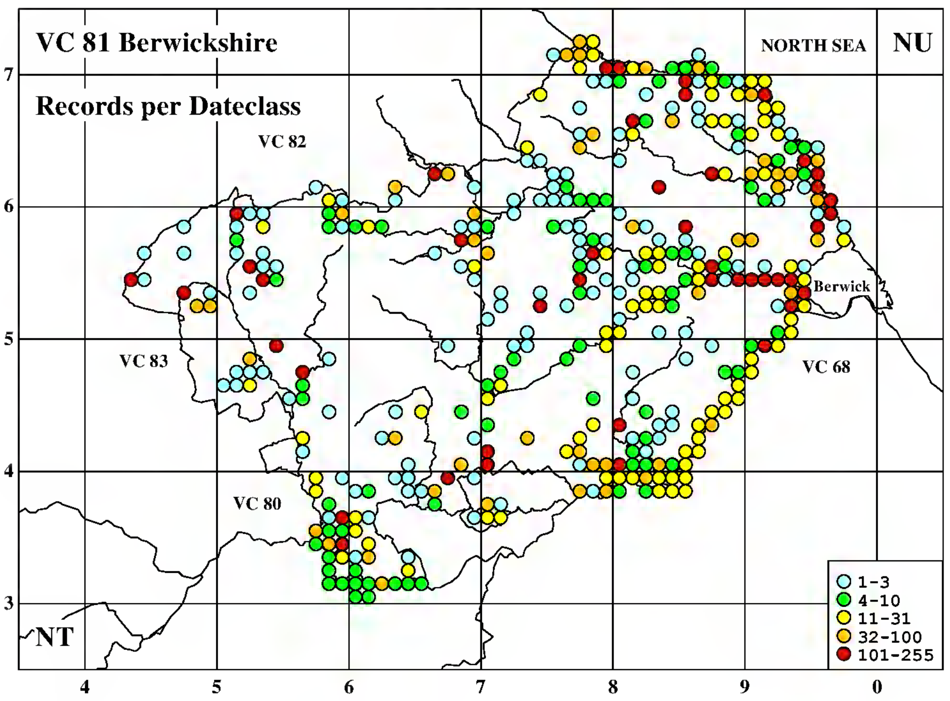
Albert Long had moved from Yorkshire to Gavinton to teach at the Berwickshire High School and was soon contributing to the *History* on *Lepidoptera*, and joined the Berwickshire Naturalists' Club in 1955. He served as president in 1972. But he was a fine botanist too and was persuaded to help the Botanical Society of the British Isles with field work for the first *Atlas of the British Flora*. He joined that Society and was appointed its Recorder for Berwickshire in 1960. The *Atlas* project stimulated other botanists, notably Ian McWhan of Cheeklaw, Duns and George Grahame of 35 Earlsmeadow, Duns, to contribute. McWhan was a complete eccentric with a motorcycle who also helped Long collect fossils. He had the misfortune to be murdered (I am told he was a philanderer). Grahame, an assistant in his family's ironmonger's business, botanised on his own and with great dedication compiled a very useful list for a limited area around Duns which is now lodged in the library of the Royal Botanic Garden, Edinburgh. Dr Franklyn Perring, the *Atlas* organiser, arranged a memorable week-long field meeting in 1960 when a very experienced team of visiting botanists scoured the county to great effect. Meanwhile Long extracted all the botanical records in Johnston's Floras and the *History* into a card index, arranged by species, together with records from other sources, such as the WFS diaries of Miss Brown and Mrs Swinton and diaries and notes kept by Mrs Pate. This was a huge achievement and Long's own fieldwork benefited greatly from the resource he had established.



The change of emphasis over the years is shown in the chart. The Berwickshire Naturalists' Club was the motivation for almost all the nineteenth century records, the period to 1970 saw contributions added by WFS and then by BSBI. Since 1970 the shift of focus to BSBI has been completed.

The third period saw the beginning of my own involvement. Long became engrossed in his study of fossil plants and resigned the botanical recordership in 1969 when I was approached through Christopher Badenoch of the Nature Conservancy Council (now reorganised as Scottish Natural Heritage) to take over following my involvement with the Scottish Wildlife Trust. During the period 1979-1986 I visited many of the sites of greatest botanical interest and followed up other records of scarce species. I had hopes at one time that the SWT membership would be a community through which botanists would come to the fore and that has indeed happened to a modest degree and more recently the Scottish Borders Biological Record

1970-1986



Centre and its successor, the Wildlife Information Centre, has provided another point of contact. The BSBI network is currently the major impetus to botanical recording and has attracted further contributions by visiting botanists. However dedicated resident botanists remain as scarce as ever in the Scottish Borders.

In 1990, at a time when Albert Long's health was failing, David Long and I thought that the time was right to celebrate Albert's work by publishing an annotated check-list of the flora with the title *The Botanist in Berwickshire,* in which I wrote up the flowering plants and ferns while David wrote up the bryophytes.

As to the fourth period, 1987-1999, it saw the fieldwork for BSBI's *New Flora of the British Isles.* That fieldwork and its repeat in the period 2000-2013 are the main subject of this *short Flora.*

During the period 1987-1999 I worked the county systematically hectad by hectad, with considerable help from Luke Gaskell, sampling each hectad as thoroughly as time allowed with two main objectives. First, to visit as many of the sites of perceived botanical interest as possible and, secondly, to compile as complete a species list as possible for each hectad by sampling all available habitats, including arable fields, the transport network and built-up areas.

The author with Albert Long

Between 2000 and 2004 I carried out much scarce plant recording, including a comprehensive survey of juniper, culminating in the publication of the *Berwickshire Rare Plant Register* in 2004. This work was followed by detailed surveys of the Abbey St Bathans oakwoods in 2005 and St Abbs Head NNR in 2006. Then in the period 2007-2013 I carried out a repeat survey of the county as a whole, following the same hectad-by-hectad pattern as the 1987-1999 survey, but with a larger sample size.

4. A botanical tour of Berwickshire

Overview of the botanical interest

The individual hectad overviews in this *short Flora* give a landscape-scale description of the countryside. The associated hectad habitat descriptions give detailed accounts of the scarcer species present in the vice-county. Further detail has been published in the *Berwickshire Rare Plant Register* 2004 and the *Berwickshire BSBI Botanical Site Register* 2013. A few words by way of a more general overview seem desirable (a slightly fuller account was published in *The Botanist in Berwickshire* 1990). The maps summarising the data in the *short Flora* should be referred to conjunction with this overview.

Berwickshire is not a county with a rich flora by national or international criteria. But it has much countryside that a botanist can find it rewarding to visit and I would argue that it is an excellent study area for those seeking to sample the issues faced by our British flora in the face of man's depredations.

Berwickshire is situated approximately in the centre of Britain in a north-to-south direction, and so escapes the bias implicit in studies of botanically-rich counties in the south of England and in the highlands of Scotland. Moreover it has a good range of broad habitats. The well-represented habitats are arable land; the aquatic and riparian communities of rivers, ponds and reservoirs; sea cliffs and sea braes; improved, neutral and acid grassland; moorland; the ruderal habitats of villages and small towns, roads and railways; the wetland communities of bogs, mires, flushes and wet grassland; and, finally, both broadleaved and conifer woodland. The only under-represented habitats are typical Scottish lochs; saltmarsh and sand dunes; calcareous grassland; the ruderal habitats of cities; and montane communities; though all these have some representation. Some habitats are in such dire condition today in relation to the native flora that they could be thought of as under-represented, but that is where the excellent historical record comes in. The well-chronicled history of change is a most valuable character of Berwickshire's flora. Study of this history is essential if the present day habitats, with their often surprising miscellany of species, are to be understood. The dire state of some habitats is not peculiar to Berwickshire. For that reason the historical records are displayed in the distribution maps within the species accounts of this *short Flora.*

In some habitats, particularly the riversides, neophytes now make up a significant element in the flora. Only a handful of species are involved in this change and they have been noted in the site descriptions. These prominent neophytes are not necessarily the most intrusive neophytes, indeed some of them, such as *Scrophularia umbrosa* Green Figwort and *Symphytum tuberosum* Tuberous Comfrey, are often thought of as relatively scarce native species. The most intrusive neophytes are listed in a dedicated list within the site accounts. Their adverse significance varies a good deal in from site to site. Thus the increasingly popular *Rosa rugosa* Japanese Rose is seen as a problem species at the coast where it self-seeds into sand, but it is not yet a problem inland as it does not seem to self-seed when planted in hedges and has only rarely formed thickets. Much the most invasive neophyte is *Allium paradoxum* Few-flowered Garlic.

The most notable botanical features of Berwickshire are its rocky coastline most famous for St Abbs Head, the river Tweed and its tributaries, the grouse moors of the Lammermuirs, a marvellous raised bog at Dogden Moss with its accompanying glacial kaims (or eskers), the sadly declining wet woodland and grassland at and around Gordon Moss, oakwoods at Abbey St Bathans and Gaitheugh and, for the discerning, the skeletal grasslands on the outcrops of the intrusive rocks of the Kelso Traps.

At species level the most notable for me are *Helianthemum nummularium* Common Rockrose as the county flower for its abundance on a variety of rock formations, *Astragalus danicus* Purple Milk-vetch for its abundance at St Abbs Head, *Potamogeton x bottnicus* Bothnian Pondweed and *Ranunculus x kelchoensis* Kelso Water-crowfoot as two specialist components of the rich aquatic flora of the river Tweed, *Sedum villosum* Hairy Stonecrop as the highlight of moderately acidic flush communities in the Lammermuirs, *Trichophorum cespitosum subsp. cespitosum* Northern Deergrass at Dogden Moss and Longmuir Moss, *Corallorhiza trifida* Coralroot Orchid at Gordon Moss, *Sorbus rupicola* Rock Whitebeam and *Convallaria majalis* Lily-of-the-valley at Gaitheugh and *Dianthus deltoides* Maiden Pink as the declining talisman of the grasslands on the Kelso traps now only impressive at Hareheugh Craigs.

Some excellent botanical features deserve wider recognition, including statutory protection. I wish to draw attention to Hareheugh Craigs with its grassland, mentioned above, Longmuir Moss with its fen and raised bog, Lumsdaine Dean and Dowlaw Moss with their mosaic of grassland and wetland communities, Cromwells with its wood pasture that is home to *Crepis mollis* Northern Hawk's-beard, the Wheel Burn as the premier example of the base-rich flush communities in the Lammermuirs and a series of flush communities in Hells Cleugh and adjacent cleughs set in some of the better managed moorland. If arable weeds are thought of as a conservation priority, attention could be directed at the abundance of *Galeopsis speciosa* Large-flowered Hemp-nettle in the Gordon area, sometimes with a diversity of *Fumaria* Fumitory species.

Explanatory note to Hectad Descriptions

Site boundaries

Some consistency has been sought when dividing the more open parts of the countryside into sites of botanical interest. Most sites are less than 1km^2 in area and the more or less linear sites are often around 2km in length. The coast and riversides may be divided into 1km or 2km sections bounded by 1km grid lines. Large sites, such as St Abbs Head and Dogden Moss, are divided into sections. Where a site spans two hectads the hectad boundary is respected, so the site will be listed in both hectads. Some sites are left as two sections, one for each hectad, but where this would be absurd the detail is brought together in one of the hectads leaving just a cross reference in the other hectad.

Hectad summary

GR-NT	Hectad	Highest point	Highest point metres	Lowest point metres	Lowest point	Monads in hectad	Sites with at least moderately good habitat	Sites area in hectares
44	Whitlaw	Lauder Common	378	236	Whitlaw, burn	10	4	369.9
45	Oxton	Hartside	468	207	Oxton, Leader	45	7	464.8
46	Kelphope Rig	Kelphope Rig	454	437	Kelphope Rig	[0.1]	0	0.0
53	Earlston	Black Hill	314	63	Dryburgh, Tweed	19	8	171.4
54	Lauder	Inchkeith Hill	368	116	Carolside, Leader	78	12	352.3
55	Carfraemill	Seenes Law	513	170	Lauderhaugh, Leader	100	19	1,612.9
56	Meikle Says Law	Meikle Says Law	532	330	Lammerlaw Burn	7	2	229.2
63	Mertoun	Brotherstone Hill	266	49	Dalcove, Tweed	47	18	318.2
64	Gordon	Knock Hill	272	131	Mark's Bridge, Eden	100	22	881.9
65	Longformacus	Blythe Edge	470	187	Longformacus, Dye	100	17	1,288.7
66	Cranshaws	Meikle Law	451	174	Smiddyhill, Whiteadder	16	2	97.3
73	Birgham	Newton Don	85	18	Birgham Haugh, Tweed	9	3	68.4
74	Greenlaw	Kyles Hill	285	82	Bogend, Blackadder	99	14	394.2
75	Duns	Hardens Hill	360	75	Cumledge, Whiteadder	100	10	448.0
76	Abbey St Bathans	Heart Law, slopes of	365	45	Pease Bridge, burn	79	19	395.0
77	Cockburnspath	Hoprig	140	0	North Sea	8	5	132.2
83	Coldstream	Homebank	52	8	Coldstream, Tweed	5	2	23.7
84	Swinton	Hirsel Law	95	3	Blount Bank, Tweed	81	10	280.3
85	Chirnside	Bunkle Edge	233	20	Hutton Hall, Whiteadder	100	10	200.3
86	Grantshouse	Drakemire Strips	268	0	North Sea	99	20	511.7
87	Dowlaw	Telegraph Hill	174	0	North Sea	6	11	279.6
94	Fishwick	Horndean, near	54	2	Fishwick, Tweed	3	3	79.4
95	Paxton	Lamberton Moor	215	0	North Sea	53	12	306.5
96	Eyemouth	Ayton Hill	195	0	North Sea	38	19	356.9
	Berwickshire VC 81	**Meikle Says Law**	**532**	**0**	**North Sea**	**1,202**	**249**	**9,262.8**

Note: Some sites are divided between two hectads and are thus duplicated in the total of 249. After subtracting duplicates, the total number of sites with at least moderately good habitat is 233.

Hectad Descriptions

NT44 Whitlaw

(Systematic sample surveys 1997, 2012)

Overview

Only 10% of the hectad NT44 is in Berwickshire. It lies between 236m near Whitlaw and 378m at Lauder Common. It lies on acid Silurian rocks and the vegetation is moorland at Lauder Common and grassland with small blocks of forestry at Whitlaw. Three small burns converge at Whitlaw farm. The B6362 crosses Lauder Common.

Sites with at least moderately good habitat	GR - NT
Lauder Common (part NT54)	4845, 4945, 4946, 5045, 5046, 5146

Habitats

Lauder Common is **moorland** of unprepossessing appearance. Its modest flora is of some interest as it has been less regularly burned than the Lammermuir grouse moors and patches of active *Sphagnum* moss survive on shallow peat with *Erica tetralix* Cross-leaved Heath and *Narthecium ossifragum* Bog Asphodel. The west section has small colonies of *Drosera rotundifolia* Round-leaved Sundew and *Vaccinium oxycoccos* Cranberry. The colonies of *Narthecium ossifragum* Bog Asphodel in the acid flushes are large, exceptionally so for Berwickshire. Base-rich flushes support much *Pedicularis palustris* Marsh Lousewort with a little *Equisetum sylvaticum* Wood Horsetail and *Parnassia palustris* Grass-of-Parnassus. *Euphrasia micrantha* Eyebright and *Viola lutea* Mountain Pansy occur where grass and heather meet. A sizable colony of *Lycopodium clavatum* Stag's-horn Clubmoss is present on recently disturbed peat by a rough track. The east section is similar but less species-rich. The adjacent moorland-edge at Muircleugh is largely drained, though *Ranunculus hederaceus* Ivy-leaved Crowfoot is still present in quantity. There is a considerable list of local extinctions.

The sides of the B6362 have *Spergularia rubra* Sand Spurrey on the verge with *Juncus ambiguus* Frog Rush and other roadside halophytes at the edge of the tarmac.

The **burnsides** above Whitlaw are home to a large colony of *Equisetum x litorale* Shore Horsetail with a reasonable diversity of grassland and wetland axiophytes. The moorland edge above has patches of botanical interest with two colonies of *Viola lutea* Mountain Pansy. A few woodland species are found near the farm.

NT45 Oxton

(Systematic sample surveys 1997, 2013)

Overview

45% of the hectad NT45 is in Berwickshire. It lies between 207m near Oxton and 468m at Hartside Hill. There is a small area around Oxton with productive farmland on the Old Red Sandstone and from here the Leader Water can be followed to its source at Longmuir Moss. The rest is hill land which lies on acid Silurian rocks. There is improved and semi-improved grassland with wind farms at Dun Law and Carfrae Common. Part of the large area of conifer forestry on Hartside Hill is now a further wind farm. The main areas of moorland are on Clints Hill and at Headshaw Heugh.

The track of the former Lauder Light Railway runs from Oxton to Threeburnford with associated old quarries at Airhouse Wood. The A68 trunk road crosses the hectad.

Sites with at least moderately good habitat	GR - NT
Clints Hill	4253, 4353, 4354, 4453, 4454
Threeburnford, cleugh near	4652, 4653
Raughy Burn	4654, 4655, 4754, 4755
Longmuir Moss (VC 81 part, also VC 82)	4750, 4751
Airhouse Wood and Quarry	4752, 4753, 4754
Headshaw Haugh	4756, 4855, 4856, 4857

Habitats

Although the **native woodland** is fragmentary it includes fine juniper scrub at Headshaw Haugh, Raughy Burn, Airhouse Quarry and by a cleugh below Threeburnford as well as decrepit birchwood at Airhouse Wood with some hazel. The juniper at Headshaw Heugh lies on steep banks with *Erica cinerea* Bell Heather and *Calluna* Heather and was associated with *Melampyrum pratense* Common Cow-wheat in 1997 but this species was not refound in 2013. Flushes near the burn have colonies of *Pedicularis palustris* Marsh Lousewort and *Pinguicula vulgaris* Common Butterwort. The botanical interest continues for some distance up the Headshaw Burn. By the Raughy Burn the botanical interest is localised with the juniper largely in a dense colony on a knowe with *Helianthemum nummularium* Common Rockrose. Airhouse Wood has small relict colonies of *Geranium sylvaticum* Wood Crane's-bill, *Gymnocarpium dryopteris* Oak Fern, *Prunus padus* Bird Cherry, *Ranunculus auricomus* Goldilocks Buttercup, *Rosa pimpinellifolia* Burnet Rose and *Viola lutea* Mountain Pansy among the hazel and birches. It is now being revitalised as woodland with plantings of oak and juniper. The quarry area adjacent has a substantial colony of native juniper.

The cleugh near Threeburnford is a fine site with a mix of interesting habitats. The juniper lies in a cleugh with *Helianthemum nummularium* Common Rockrose and *Populus tremula* Aspen. This area has recently been fenced and planted with more juniper and a variety of other ‘native species’, some of which would never have occurred there naturally. A little upstream there are a series of fine **calcareous flushes** by the burn with *Dactylorhiza incarnata* Early Marsh-orchid, *Eleocharis quinqueflora* Few-flowered Spike-rush, *Euphrasia scottica* Eyebright and *Trollius europaeus* Globeflower. Steep heathy and **grassland** banks nearby have a fine colony of *Viola lutea* Mountain Pansy. Above Hartside there are similar grassy banks by the burnsides with *Koeleria macrantha* Crested Hair-grass, but the habitat is fragmentary.

Longmuir Moss from adjacent grassland site 1998

The key **wetland** site is Longmuir Moss on the boundary with Midlothian. This is a valley mire with a raised bog on the southern half and a fen area to the north with patches of willow carr. The willows include *Salix pentandra* Bay Willow and *S. phyllicifolia* Tea-leaved Willow. There is also an area of base-rich grassland on a knowe by the east side. The raised bog is in good condition and where it grades into fen there is ground water movement that supports a colony of the rare *Trichophorum cespitosum subsp. cespitosum* Northern Deergrass amongst the *Sphagnum* moss with *Salix phyllicifolia* nearby. The fen proper is very species-rich with much *Parnassia palustris* Grass-of-Parnassus and *Pedicularis palustris* Marsh Lousewort. It has a large colony of *Carex diandra* Lesser Tussock-sedge at its only station in Berwickshire. *Pyrola minor* Common Wintergreen occurs in the willow carr.

Further wetland occurs along the Mountmill Burn with *Carex paniculata* Greater Tussock-sedge and *Geranium sylvaticum* Wood Crane's-bill, but the habitat is fragmentary.

Clints Hill is an attractive area of **acidic moorland** with screes at the west end but the botanical interest is very localised by small burns on the north side where crags support one young bush of juniper and where flushes support *Carex dioica* Dioecious Sedge and *Selaginella selaginoides* Lesser Clubmoss. There is a substantial amount of *Salix aurita* scrub and a colony of the hybrid thistle *Cirsium x celakovskianum* (*C. arvense x C. palustre*). *Epilobium brunnescens* New Zealand Willowherb now occurs in a few places. The Armet Water at the foot of the hill is home to some aquatic species of acidic waters.

***Lycopodium clavatum* by road in Hartside forestry**

The **forestry** at Hartside Hill has access roads with a wide stony ditch at the margin, hewn from the hillside. Here a remarkable community has developed over several kilometres with abundant clubmosses. *Lycopodium clavatum* Stag's-horn Clubmoss is the principal species present but *Diphasiastrum alpinum* Alpine Clubmoss is well scattered and a single plant of *Huperzia selago* Fir Clubmoss has been found. *Euphrasia micrantha* Eyebright is abundant in the same habitat.

In **ruderal** habitats around Oxton village *Papaver dubium subsp. lecoqii* Yellow-juiced Poppy is sometimes seen. This is thought to have been introduced with the railway. **Arable weeds** include *Galeopsis speciosa* Large-flowered Hemp-nettle near Threeburnford and more widely.

The A68 has the usual **roadside** halophytes. A lay-by at Red Brae has a stony bank hewn from the hillside with abundant lichens. Here *Lycopodium clavatum* Stag's-horn Clubmoss has colonised but the *Diphasiastrum alpinum* Alpine Clubmoss which was also present appears to have died out as the open habitat is now being colonised by a wider range of species.

NT46 Kelphope Rig

Overview

Less than 0.1% of the hectad NT46 is in Berwickshire. This six hectare patch of apparently undistinguished hill grassland at NT4960 lies on acid Silurian rocks between 437m and 454m on the watershed with East Lothian and has only been viewed from afar. No botanical records are held.

NT53 Earlston

(Systematic sample surveys 1995, 2010)

Overview

19% of the hectad NT53 is in Berwickshire. It lies between 63m by the Tweed below Dryburgh and 314m at the Black Hill. The geology is largely Old Red Sandstone. Here the Leader Water runs from Carolside to Leaderfoot to join the River Tweed whose flow east from that junction is interrupted by two great bends in the river at Gledswood and Dryburgh. Most of the steep banks by the Leader and Tweed are wooded and here much of the botanical interest of the hectad is found, with further interest at the riverside itself. The two main hills, the Black Hill and Bemersyde Hill, are of intrusive rocks. Redpath Hill, now Craighouse Quarry, and the eminence near Dryburgh where Wallace's Statue stands are also of intrusive rocks.

Between the hills and the rivers there is productive farmland and the settlements of Earlston, Redpath and Dryburgh. A short section of the A68 trunk road runs north from Earlston, but little remains of the former railway track east from Earlston towards Gordon.

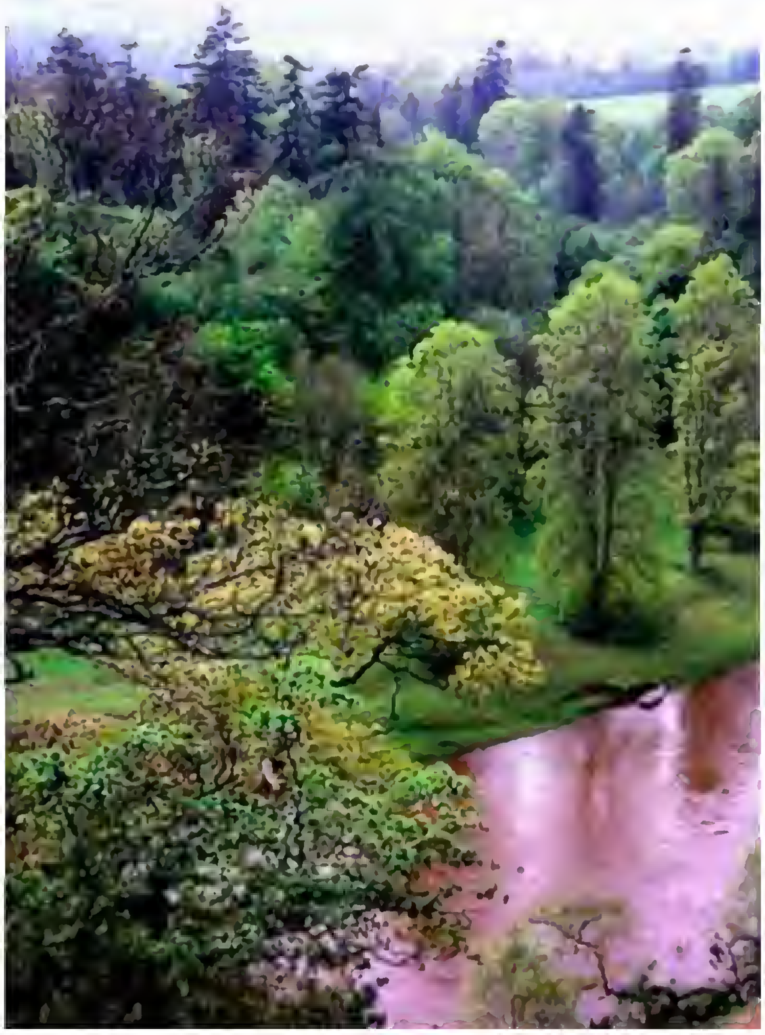
Sites with at least moderately good habitat	GR - NT
Carolside, south section	5539, 5639
Leaderfoot to above Redpath, Leader Water	5735, 5736, 5835
Cowdenknowes	5737
Gledswood	5734, 5834,
Gaitheugh (Gateheugh)	5833, 5933, 5934
Black Hill	5836, 5837
Bemersyde Hill, Scott's View	5933, 5934
Redpath Moss (part NT63)	5936, 6036

Habitats

The riverside **woodlands** are on the site of native woods of elm and ash with oak on the steeper banks and alder by the river. Most of the woodland is much modified by plantings but pockets of less-disturbed habitat occur on the steepest ground. There are no substantial patches of unmodified habitat by the Leader. Nevertheless the ground flora remains representative of native woodland. A speciality is *Lathraea squamaria* Toothwort which is frequent on a variety of host species. A few native bushes of *Euonymus europaeus* Spindle and *Viburnum opulus* Guelder-rose survive at the foot of crags. Likewise *Carex remota* Remote Sedge and *Listera ovata* Common Twayblade are but poorly represented. *Cardamine amara* Large Bitter-cress, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Polystichum aculeatum* Hard Shield-fern and *Prunus padus* Bird Cherry are much more plentiful while colonies of *Hyacinthoides non-scripta* Bluebell, so infrequent in Berwickshire, are more scattered. *Claytonia sibirica* Pink Purslane and *Meconopsis cambrica* Welsh Poppy are well naturalised near the river.

Gledswood and River Tweed 2001

Similar woodland occurs by the Tweed from Leaderfoot to Bemersyde, but here the woodland strip is deeper and much larger patches of relatively unmodified habitat survive. Gledswood is notable for *Lathraea squamaria* Toothwort, *Geranium sylvaticum* Wood Crane's-bill, including a pale-flowered variety with deeper pink veins, and *Hyacinthoides non-scripta* Bluebell, including an occasional autumn-flowering plant. There is remarkable habitat at the bend in the river below Bemersyde Hill where the dean at Halidean marks the upstream limit of the intrusive rocks.


Scott's view of the Eildons from the old oaks at Gaitheugh 1993

Immediately below, at Gaitheugh (now Gateheugh, but the old spelling makes it clear that this is the cliff of the wild goats), the intrusive rocks have weathered to yield unstable slopes of calcareous detritus interspersed with much more resistant rock outcrops. Many unexpected species occur here, albeit in small quantity, most notably *Arabis hirsuta* Hairy Rock-cress, *Astragalus glycyphyllos* Wild Liquorice, *Clinopodium vulgare* Wild Basil, *Convallaria majalis* Lily-of-the-valley, *Echium vulgare* Viper's-bugloss, *Galium boreale* Northern Bedstraw, *Galium sterneri* Limestone Bedstraw, *Juniperus communis* Juniper, *Sorbus rupicola* Rock Whitebeam, *Thalictrum minus* Lesser Meadow-rue and *Viola hirta* Hairy Violet. The *Convallaria majalis* has only recently been discovered on a very inaccessible ledge, but it appears to be native. The healthy colony of *Sorbus rupicola* is assuredly native. *Helianthemum nummularium* Common Rockrose is plentiful on the calcareous detritus with a naturalised population of *Helleborus foetidus*. Woodland species of note include *Circaea x intermedia* Upland Enchanter's-nightshade, *Euonymus europaeus* Spindle, *Melampyrum pratense* Common Cow-wheat, *Melica uniflora* Wood Melick and *Ranunculus auricomus* Goldilocks Buttercup. *Melica nutans* Mountain Melick appears to have been lost recently while the current status of *Vaccinium vitis-idaea* Cowberry is unclear. *Hieracium* Hawkweed microspecies of interest occur here.

The riverside itself is less notable. The **aquatic flora** is poor, though *Potamogeton x olivaceus* Graceful Pondweed has twice been recorded at Gledswood and *Mimulus x robertsii* Hybrid Monkeyflower is a neophyte that is frequent on the gravels along the Leader. The **riparian flora** by the Leader has an excess of *Phalaris arundinacea* Reed Canary-grass while the neophytes *Allium paradoxum* Few-flowered Garlic, *Doronicum pardalianches* Leopard's-bane and *Symphytum tuberosum* Tuberous Comfrey have spread into the woodland in abundance. By the Tweed the same neophytes are joined by *Impatiens glandulifera* Indian Balsam and *Lysimachia vulgaris* Yellow Loosestrife but *Carex acuta* Slender Tufted-sedge, *Scirpus sylvaticus* Wood Club-rush and *Senecio aquaticus* Marsh Ragwort occur at Gledswood or Gaitheugh. The Turfford Burn at Earlston has much *Solanum dulcamara* Bittersweet at its banks

There is only a little **moorland** left on the Black Hill with a lone bush of juniper, and the **acid grassland** there is now very species-poor following nitrogen application. *Viola lutea* Mountain Pansy may or may not survive. However the screes support a large population of *Cryptogramma crispa* Parsley Fern with *Ceratocapnos claviculata* Climbing Corydalis frequent amongst whins on the screes and in the larch plantation below. Bemersyde Hill, both above and below the road at Scott's View, differs from the Black Hill despite the rather similar geology. Little of the grassland is botanically rewarding but there are patches on the most skeletal soils and at small rock outcrops with a more notable flora. These patches support good colonies of *Cerastium arvense* Field Mouse-ear and the annuals *Cerastium semidecandrum* Little Mouse-ear, *Filago minima* Small Cudweed, *Scleranthus annuus* Annual Knawel, *Spergularia rubra* Sand Spurrey, *Stellaria pallida* Lesser Chickweed and *Vulpia bromoides* Squirrel-tail Fescue. The summit of Bemersyde Hill is reseeded grassland. A tiny patch of grassland on basalt above Wallace's Statue has *Cerastium arvense* Field Mouse-ear and *Trifolium striatum* Knotted Clover.

Redpath Moss is the principal **wetland** site, described here though half of it falls in hectad NT63. The habitat remains in good condition. The willow carr and associated wet grassland is home to *Carex curta* White Sedge, *C. paniculata* Greater Tussock-sedge, *Listera ovata* Common Twayblade, *Pyrola minor* Common Wintergreen, *Silaum silaus* Pepper-saxifrage, *Trollius europaeus* Globeflower and *Vaccinium oxycoccos* Cranberry. *Corallorhiza trifida* Coralroot Orchid is a speciality of the moss, but was not encountered in 2010. Halidean Mill Moss is much modified but is a station for *Hippuris vulgaris* Mare's-tail.

The **arable weed** flora is not exceptional but *Fumaria densiflora* Dense-flowered Fumitory has been recorded recently from two fields. *Erysimum cheiranthoides* Treacle Mustard and *Sinapis alba* White Mustard appear to be introductions, the latter being grown as a game crop and often persisting.

Of the more **ruderal** habitats Park Quarry is interesting with a colony of *Cynoglossum officinale* Hound's-tongue on the rocky slopes and a colourful show of orchids, mainly *Dactylorhiza fuchsii* Common Spotted-orchid, on the old quarry floor. At Earlston *Senecio squalidus* Oxford Ragwort and *Trifolium arvense* Hare's-foot Clover are thought to be relicts of the railway while *Malva moschata* Musk Mallow, also about Dryburgh, may be a more-or-less naturalised introduction rather than a native.

NT54 Lauder

(Systematic sample surveys 1997, 2012)

Overview

78% of the hectad NT54 is in Berwickshire. It lies between 116m by the Leader Water by Carolside and 368m at Inchkeith Hill. This is the heart of Lauderdale with productive farmland on the Old Red Sandstone. Away from the vale, the hill land lies on acid Silurian rocks and is mainly improved grassland except for the moorland on Lauder Common.

Sites with at least moderately good habitat	GR - NT
Lauder Common, east section, Muircleugh (see NT44)	5045, 5046, 5146
Lauder Burn	5144, 5145, 5146, 5246
Edgarhope Wood, Drummonds-hall	5448, 5449
Carolside, north section	5640
Chapel on Leader	5542, 5641, 5642
Whitslaid	5544
Boon Bridge	5545
Boondreigh Water, Dod Mill	5645, 5646, 5647, 5747, 5848
Blythe Water	5748, 5749, 5848
Pyatshaw Meadow by Brunta Burn, Blythe Water	5848
Pickie Moss	5844, 5944
Everett Moss, fen at west end of	5943

There is a modest amount of forestry. The town of Lauder has a small industrial estate on the site of the old railway station. The policies of Thirlestane Castle lie adjacent to the town. The A68 and A697 trunk roads cross the hectad.

Habitats

The **mixed woodland** of alder, elm, ash and oak that is so much a feature beside the lower part of the Leader Water in NT53 continues through the policies of Carolside and Chapel on Leader to Whitslaid. More fragmentary woodland and scrub is found by the Boondreigh Water. The woods are discontinuous and much modified by plantings but botanical interest remains, especially on the steepest banks. *Prunus padus* Bird Cherry, *Galium odoratum* Woodruff and *Saxifraga granulata* Meadow Saxifrage are features of the woodland. *Euonymus europaeus* Spindle is present as a presumed native at Carolside and Whitslaid. Carolside also has *Cystopteris fragilis* Brittle Bladder-fern, *Lathraea squamaria* Toothwort, *Melica uniflora* Wood Melick and *Polypodium interjectum* Intermediate Polypody. Chapel on Leader and Whitslaid have *Clinopodium vulgare* Wild Basil while the former adds *Pyrola minor* Common Wintergreen and the latter *Ranunculus auricomus* Goldilocks Buttercup and *Rosa pimpinellifolia* Burnet Rose with a further colony of *Cystopteris fragilis* Brittle Bladder-fern. *Ranunculus auricomus* Goldilocks Buttercup also occurs by the Boondreigh Water with *Carex remota* Remote Sedge, *Solidago virgaurea* Goldenrod and a few native bushes of *Viburnum opulus* Guelder-rose. *Allium paradoxum* Few-flowered Garlic and *Claytonia sibirica* Pink Purslane have spread down the Leader Water from Boon Bridge. The *Allium* has now colonised the roadside at Dod Mill whence dispersal down the Boondreigh Water is inevitable in the near future.

Old Thirlestane Castle and the Boondreigh Water 2012

There were formerly extensive oakwoods by the Earnscleugh Water at Edgarhope Wood, but only a few oaks remain there at the foot of conifer plantations. Lower down the burn at Drummonds-hall there is mixed woodland at the transition from the Old Red Sandstone to the Silurian, but it is almost all plantation and the botanical interest is modest, though there are good colonies of *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage.

The **riversides** of the upper Leader and Boondreigh Waters have extensive banks of sand and gravel, with *Lepidium heterophyllum* Smith's Pepperwort constant. The extent of the sand and gravel increases downstream from Thirlestane Castle and is notable at Boon Bridge and up the Boondreigh Water. Here *Chenopodium bonus-henricus* Good-King-Henry and *Mimulus x robertsii* Hybrid Monkeyflower have become widely naturalised and *Rhinanthus minor* Yellow-rattle is occasional. There are pools and oxbows in places, especially up the Boondreigh Water with *Cardamine amara* Large Bitter-cress, *Iris pseudacorus* Yellow Iris and *Lychnis flos-cuculi* Ragged-Robin. The grassy banks by the Boondreigh Water are also productive botanically with *Agrimonia eupatoria* Agrimony, *Alchemilla filicaulis subsp. vestita* Hairy Lady's-mantle, *Leontodon hispidus* Rough Hawkbit and *Linum catharticum* Fairy Flax in the more base-rich areas and a splendidly natural community of *Rosa* species Roses scattered through the scrub. Taken together, the woodland, wetland and grassland interest over a three kilometre stretch make this a remarkably diverse site.

The **hill burns** are quite varied. The finest botanical feature of the hectad is the juniper scrub up the Blythe Water, the name for the upper part of the Boondreigh Water. This has recently been altered by extensive planting of juniper and the naturalness of the site has been somewhat spoilt in the process. Other species of interest there include *Carex laevigata* Smooth-stalked Sedge, *Ceratocapnos claviculata* Climbing Corydalis, *Geranium sylvaticum* Wood Crane's-bill, *Gymnocarpium dryopteris* Oak Fern, *Helianthemum nummularium* Common Rockrose and *Solidago virgaurea* Goldenrod. Where the Brunta Burn runs into the Blythe Water there is a wet meadow with *Veronica x lackschewitzii* Hybrid Water-speedwell. A further meadow a little up the Brunta Burn is more natural with alders by the burn together with wetland and relatively species-rich grassland. Here there is a colony of *Cirsium heterophyllum* Melancholy Thistle with *Geranium sylvaticum* Wood Crane's-bill.

The Lauder Burn has its source in Roxburghshire at Threepwood Moss. The upper Berwickshire sections of the burn have an aquatic flora of a type not surviving elsewhere in the county comprising *Apium inundatum* Lesser Marshwort, *Callitriche hermaphroditica* Autumnal Water-starwort, *Myriophyllum alterniflorum* Alternate-flowered Water-milfoil, *Potamogeton alpinus* Red Pondweed and *Sparganium emersum* Unbranched Bur-reed. The *Potamogeton* was not refound in 2012 or 2013 but could reappear. *Senecio aquaticus* Marsh Ragwort grows at the banks of the burn. Flushed areas adjacent have *Carex paniculata* Greater Tussock-sedge, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Crepis paludosa* Marsh Hawk's-beard and *Valeriana dioica* Marsh Valerian. There are rocky places and screes near the burn with a varied flora including *Dryopteris oreades* Mountain Male-fern, *Gymnocarpium dryopteris* Oak Fern, *Juniperus communis* Juniper and *Viola lutea* Mountain Pansy. The Harry Burn has a much less varied flora.

Lauder Common is described under hectad NT44.

There is a modest but interesting **wetland** at Pickie Moss with *Carex curta* White Sedge, *Carex paniculata* Greater Tussock-sedge and *Typha latifolia* Bulrush. *Salix repens* Creeping Willow may still survive with the *Pedicularis palustris* Marsh Lousewort in the open heathy area. *Pyrola minor* Common Wintergreen grows in the willow carr. The western outflow from Everett Moss falls in the hectad. The canalised burn has a large population of *Catabrosa aquatica* Whorl-grass and there is frequent *Carex paniculata* Greater Tussock-sedge along its banks and in the fairly extensive fen area alongside with *Carex vesicaria* Bladder Sedge, *Galium palustre subsp. elongatum* Great Marsh-bedstraw and *Typha latifolia* Bulrush. An old mill pond at Birkenside has *Catabrosa aquatica* Whorl-grass and *Hippuris vulgaris* Mare's-tail. A farm pond at Legerwood formerly had *Apium inundatum* Lesser Marshwort and *Rumex palustris* Marsh Dock at its muddy margins but the pond is now fenced and such mud communities have not been seen there for a considerable period though the charophyte *Nitella flexilis/opaca* aggregate was recorded in 1997. A small colony of *Trollius europaeus* Globeflower survives by the Washing Burn, but with few associates of note.

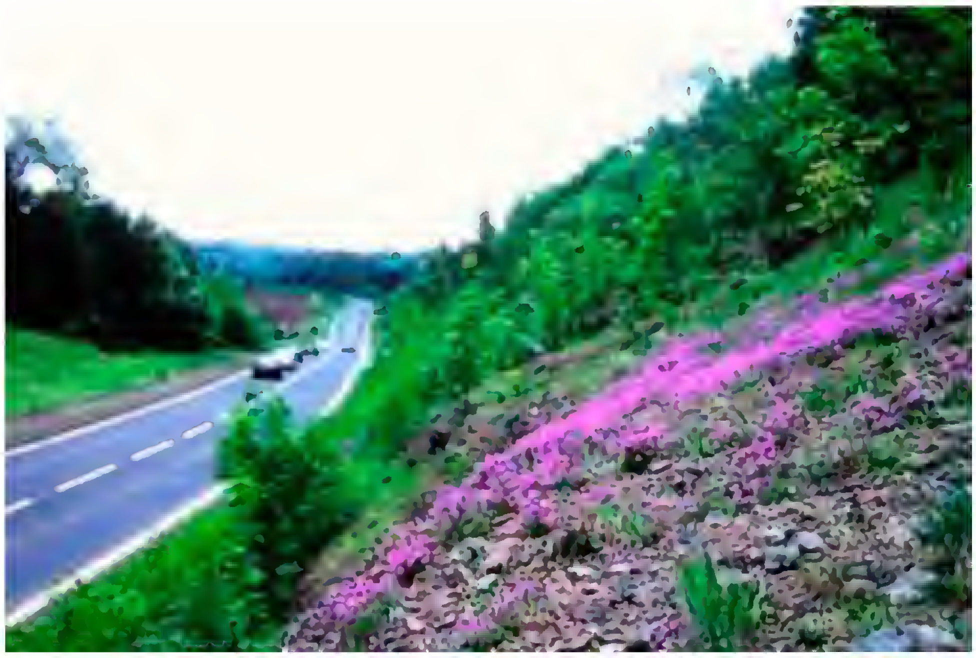
The **policies** of Thirlestane Castle are where Andrew Brotherston collected the nationally rare *Carex muricata subsp. muricata* Prickly Sedge on several occasions from 1874 to 1878, but it has not been seen since. Well-authenticated specimens are preserved at the Natural History Museum in London. It may have been introduced accidentally with a seed-mixture of grasses and sedges to naturalise in woodland as *Milium effusum* Wood Millet was recorded before 1902 and *Luzula luzuloides* White Wood-rush and *Carex divulsa subsp. leersii* Leers' Sedge are present today. The policy woodlands have only modest botanical interest unless *Epipactis helleborine* survives: this was seen at Standalane Plantation in 1982, the last record for Berwickshire.

The **arable fields** are well managed and arable weeds are few, though the fields at the edge of the town at Lauder have occasional weedy corners. There have been a few surprises: *Fumaria purpurea* Purple

Ramping-fumitory turned up at the Golf Course in 2004 and *Bromus commutatus* Meadow Brome near the Milsie Burn in 2007. *Galeopsis speciosa* Large-flowered Hemp-nettle is occasional, being much less frequent here than in the adjacent hectad NT64. *Aethusa cynapium* Fool's Parsley has been seen only as a weed below a wall at Legerwood Kirk.

The **town** of Lauder has notable high stone walls with a range of neophytes including *Euphorbia cyparissias* Cypress Spurge and *Cymbalaria muralis* Ivy-leaved Toadflax. *Cymbalaria hepaticifolia* Corsican Toadflax and *C. pallida* Italian Toadflax also occur around the town. *Viola tricolor* Wild Pansy has been seen on the industrial estate and there is a wet grassy area nearby with *Achillea ptarmica* Yarrow, *Lychnis flos-cuculi* Ragged-Robin and *Rhinanthus minor* Yellow-rattle.

The **roadsides** have the now-familiar halophytes including *Cochlearia danica* Danish Scurvygrass from 2007. The *Cochlearia* has been notably slow to colonise the A68 south from Edinburgh but is gradually becoming more widespread. *Rumex longifolius* Northern Dock had become quite frequent further from the tarmac by 2007 but was not seen at all in 2012, though one plant was found in 2013 at a new site. *Atriplex littoralis* Grass-leaved Orache has appeared on the A697 while *Juncus ambiguus* Frog Rush and *Sagina maritima* Sea Pearlwort have colonised the nutrient-poor roadsides of the B6362 at Lauder Common. There is a remarkable colony of *Erinus alpinus* Fairy Foxglove by the A68 at Chapel on Leader where it has colonised a rock cutting on the Old Red Sandstone in quantity.



***Erinus alpinus* above the A68 Chapel on Leader 1999**

NT55 Carfraemill

(Systematic sample surveys 1992, 2009)

Overview

All of the hectad NT55 is in Berwickshire. It lies between 170m by the Leader Water below Lauderhaugh and 513m at Seenes Law. While the hectad has productive farmland in Lauderdale on the Old Red Sandstone, that is only a relatively small area near the Leader Water below Carfraemill. The rest of the hectad is in the heart of the Lammermuirs on acid Silurian rocks. The land is open grouse moor dissected by a series of burns running south into the Leader Water, except in the northeast which lies across the watershed at the head of the Dye Water.

There is as yet no extensive forestry nor are there wind farms, though a line of pylons crosses the north of the hectad serviced by a well-built track. There is an established plantation at Edgarhope Wood and more recent plantings are evident in the lower sections of the hill burns, many of them orientated to the development of the shooting estates. These are now supplemented by annually-cultivated game strips or longer-term sowings and by new ponds.

Access is available up the main burns. From Dodcleugh for Kelphope Burn, from Longcroft for Soonhope and Whalplaw Burns, from Blythe for the upper Blythe Water, from Spottiswoode for the Brunta Burn and from Byrecleugh for the upper Dye Water. Tollishill gives access to the tops via the upland tracks servicing the pylons and the grouse moors. These tops include Crib Law 509m and Seenes Law 513m. Alternative hill routes are the Herring Road, an old drove road, from Burncastle and the Southern Upland Way from Wanton Walls to Twin Law.

Sites with at least moderately good habitat	GR - NT
Carfraemill, Leader Water near	5052, 5152
Addinston Hill, wet meadow north of	5155
Kelphope Burn	5157, 5158, 5159
Crib Law, south section	5259
Soonhope Burn, lower section	5255, 5354, 5355
Soonhope Burn, upper section	5356, 5357, 5358, 5359
Whalplaw Burn, lower section	5354, 5355, 5454, 5455
Whalplaw Burn, upper section	5456, 5457, 5556, 5557, 5558
Earnscleugh Water	5451, 5452, 5553, 5554, 5654, 5655
Wheel Burn, Blythe Water	5650, 5651, 5750, 5751
Cromwells, Brunta Burn	5950, 5951

Habitats

The **heather moorland** is almost exclusively managed by muirburn optimised to the grouse-shooting interests. This is not a happy outcome from a botanical viewpoint as it leaves very uniform species-poor communities. While the moors can never have been at all species-rich it is the peatland communities that have suffered most. The Lammermuir peats are mostly very thin and active *Sphagnum* moss has now been wholly destroyed over much of the area by centuries of muirburn. Species that have suffered include *Erica tetralix* Cross-leaved Heath, *Eriophorum vaginatum*, *Empetrum nigrum* and *Vaccinium myrtillus*. *Narthecium ossifragum* Bog Asphodel is unknown in the hectad but is likely to have occurred in the past. *Genista anglica* Petty Whin is the most recent casualty and was not refound anywhere in the hectad in 2009. Its exact requirements are a little obscure but the frequency of the muirburn appears to be the main problem. Species of the drier slopes have continued to prosper, especially *Erica cinerea* Bell Heather which is locally abundant.

Cleugh at head of Whalplaw Burn 2009

True **blanket bog** with deep peat has been almost entirely lost. There are degraded fragments at North Hart Law and Little Reds Cleugh but the *Rubus chamaemorus* Cloudberry once associated with them was not refound in 2009. Active *Sphagnum* moss does survive on a few steep north-facing banks in the cleughs and here there are small colonies of *Listera cordata* Lesser Twayblade with a few plants of *Vaccinium vitis-idaea* Cowberry, otherwise known only on the summit of Crib Law. Clubmosses were formerly found in the open moorland but have disappeared from that habitat, whether from the frequency of muirburn or eutrophication. However *Lycopodium clavatum* Stag's-horn Clubmoss, with one plant of *Diphasiastrum* *alpinum* Alpine Clubmoss, has colonised the **stony sides of the track** servicing the pylons, especially in the passing places where the plants are little disturbed.

BSBI party at juniper in Foxes Cleugh off the Whalplaw Burn 1983

The burnsides are where most of the botanical interest is concentrated. However much of the habitat away from the heather is species-poor **acid grassland**, though that in itself is a habitat of interest. Here one may savour the simple delights of *Lotus corniculatus* Bird's-foot Trefoil and *Thymus polytrichus* Wild Thyme. There are also areas of **neutral grassland** with a wider range of species including *Helianthemum nummularium* Common Rockrose, but these are localised. Of greater interest are the **screes and rocky places** by the burns which support healthy juniper colonies and populations of such species as *Euphrasia micrantha* Eyebright, *Gymnocarpium dryopteris* Oak Fern, *Rosa pimpinellifolia* Burnet Rose and *Solidago virgaurea* Goldenrod. The best juniper is at Dodcleugh, by the Whalplaw Burn and the Earnscleugh Water (most of the Blythe Water juniper is just south of the hectad). The dense juniper colony at Dodcleugh is composed of unusually small bushes. Some of the **cleughs** are quite rich in ferns, especially *Oreopteris limbosperma* Lemon-scented Fern, and are now well-colonised by *Epilobium brunnescens* New Zealand Willowherb but more montane species are absent. **Native woodland** is very poorly represented, with scraps of birchwood up the Soonhope Burn apparently no longer host to *Melampyrum pratense* Common Cow-wheat.

BNC party at Wheel Burn 2010

The botanist soon finds himself working the burnsides for **wetland communities** and these are far from plentiful. *Juncus articulatus* flushes are only modestly widespread and those with a base-rich influence are scarce. Nevertheless species such as *Carex disticha* Brown Sedge, *Geum rivale* Water Avens and *Valeriana dioica* Marsh Valerian are not rare. There are two types of more specialised flushes that are of special interest. First and foremost are the **open acid flushes dominated by bryophytes** where *Sedum villosum* Hairy Stonecrop can be plentiful. These communities are kept open by a steady flow of spring water. There are not very many of them and they may be changing. A high proportion of the *Sedum villosum* Hairy Stonecrop populations recorded around 20 years before were not refound in 2009, especially those lower down the burns. The provisional conclusion is that a number have succumbed to invasion by rushes *Juncus* species (especially *J. effusus*) perhaps mainly as a result of eutrophication. The best *Sedum villosum* Hairy Stonecrop flushes surviving may be the two found in cleughs off the upper Soonhope Burn.

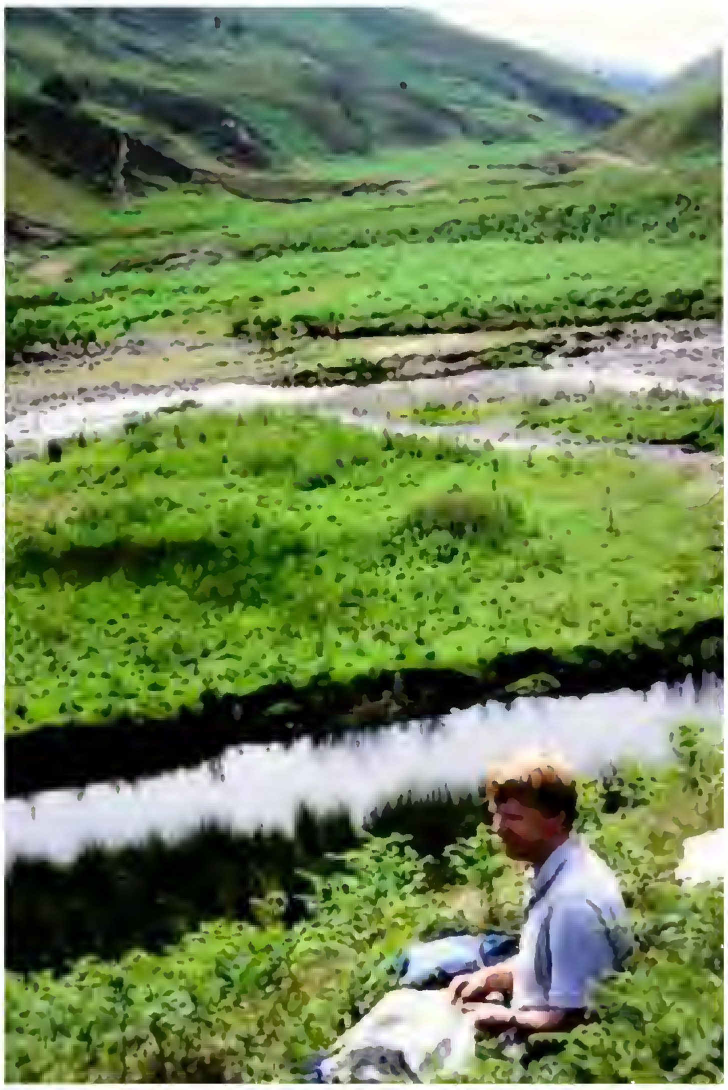
Base-rich flushes are even rarer. There is a fine flush in the upper Whalplaw Burn with *Eriophorum latifolium* Broad-leaved Cottongrass and *Eleocharis quinqueflora* Few-flowered Spike-rush and two in the Wheel Burn, a tributary of the Blythe Water, are of a type not found elsewhere in Berwickshire with *Anagallis tenella* Bog Pimpernel, *Parnassia palustris* Grass-of-Parnassus, *Pedicularis palustris* Marsh Lousewort and *Sagina nodosa* Knotted Pearlwort.

David Long, Ron McBeath and party Cromwells 1995

An interesting wetland occurs unexpectedly below Addinston Hill in the form of a substantial **wet meadow** on a heavily flushed slope. This is dominated by the rushes *Juncus acutiflorus* and *J. articulatus* accompanied by such species as *Achillea ptarmica* Sneezewort, *Briza media* Quaking-grass, *Crepis paludosa* Marsh Hawk's-beard, *Geum rivale* Water Avens, *Lychnis flos-cuculi* Ragged-Robin and *Valeriana dioica* Marsh Valerian, all in plenty. Unfortunately grazing has been discontinued and coarse grasses are increasing.

But there is one splendid site that refuses to fit into any simple list of habitats as it includes a **mix of woodland, woodland-edge, base-rich rocky knowes, burnsides and flushed areas**. This is at Cromwells by the Brunta Burn and home to *Carex laevigata* Smooth-stalked Sedge, *C. pallescens* Pale Sedge, *Crepis mollis* Northern Hawk's-beard, *Gymnadenia conopsea* Fragrant Orchid, *Helianthemum nummularium* Common Rockrose, *Melica uniflora* Wood Melick with *Prunus padus* Bird Cherry and *Saxifraga granulata* Meadow Saxifrage by the burn and *Hyacinthoides non-scripta* Bluebell in the wood.

The hill burnsides themselves are only modestly species-rich but below Longcroft the Cleekimin Burn has extensive **gravels** with a rather ruderal flora including plentiful *Carduus crispus* Welted Thistle, usually thought of as a more lowland species. *Lepidium heterophyllum* Smith's Pepperwort is a specialty of the gravels of the Leader Water as a whole as is *Chenopodium bonus-henricus* Good-King-Henry, while *Mimulus guttatus* Monkeyflower and *Mimulus x robertsii* Hybrid Monkeyflower are sometimes spectacular in the **ox-bows** with *Ranunculus aquatilis* Common Water-crowfoot. *Mimulus x burnetii* Coppery Monkeyflower is plentiful by the Kelphope Burn.


David Long by Whalplaw Burn 1992

The **damp grassland** adjacent to the Cleckimin Burn and by the Leader Water itself has frequent *Festuca pratensis* Meadow Fescue and a little *Isolepis setacea* Bristle Club-rush. Just below Carfraemill the Leader Water has well-flushed riversides with much *Geum rivale* Water Avens and *Iris pseudacorus* Yellow Iris together with a little

Chrysosplenium alternifolium Alternate-leaved Golden-saxifrage and *Crepis paludosa* Marsh Hawk's-beard.

Edgarhope Wood is a plantation on a **former oak wood** site that still has good banks of *Hyacinthoides non-scripta* Bluebell. Hazeldean Wood has *Prunus padus* Bird Cherry as well as hazel, though the wood is only a small group of trees by the lower Kelphope Burn.

Addinston, at the very edge of the arable area, has a diverse **arable weed flora** probably reflecting the light soils and a history of periods in grass between cultivations. Species present include *Fumaria officinalis subsp. wirtgenii* Common Fumitory, *F. purpurea* Purple Ramping-fumitory, *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle, *L. hybridum* Cut-leaved Dead-nettle, *Persicaria lapathifolia* Pale Persicaria and *Sherardia arvensis* Field Madder. *Galeopsis speciosa* Large-flowered Hemp-nettle occurs elsewhere in the hectad on less well-drained soil.

NT56 Meikle Says Law

(Systematic sample surveys 1998, 2010)

Overview

Only 7% of the upland hectad NT56 is in Berwickshire. It lies between 330m by the Lammerlaw Burn and 532m by Meikle Says Law, 3m short of its summit in East Lothian. The land is open grouse moor in the heart of the Lammermuirs on acid Silurian rocks. In the west the Lammerlaw Burn runs between Crib Law and Lammer Law to the Kelphope Burn which in turn feeds into the Leader Water. In the east a series of burns below Meikle Says Law and Little Says Law form the headquarters of the Dye Water.

There is as yet no forestry nor are there wind farms, though a line of pylons crosses the southeast corner of the hectad serviced by a well-built track.

Tollishill gives access to the western tops and the Lammerlaw Burn via the upland tracks servicing the pylons and the grouse moors. The burns to the east can be reached by tracks from Byrecleugh on the Dye Water or from Faseny Bridge on the Faseny Water. An alternative route to Meikle Says Law is from Faseny Cottage.

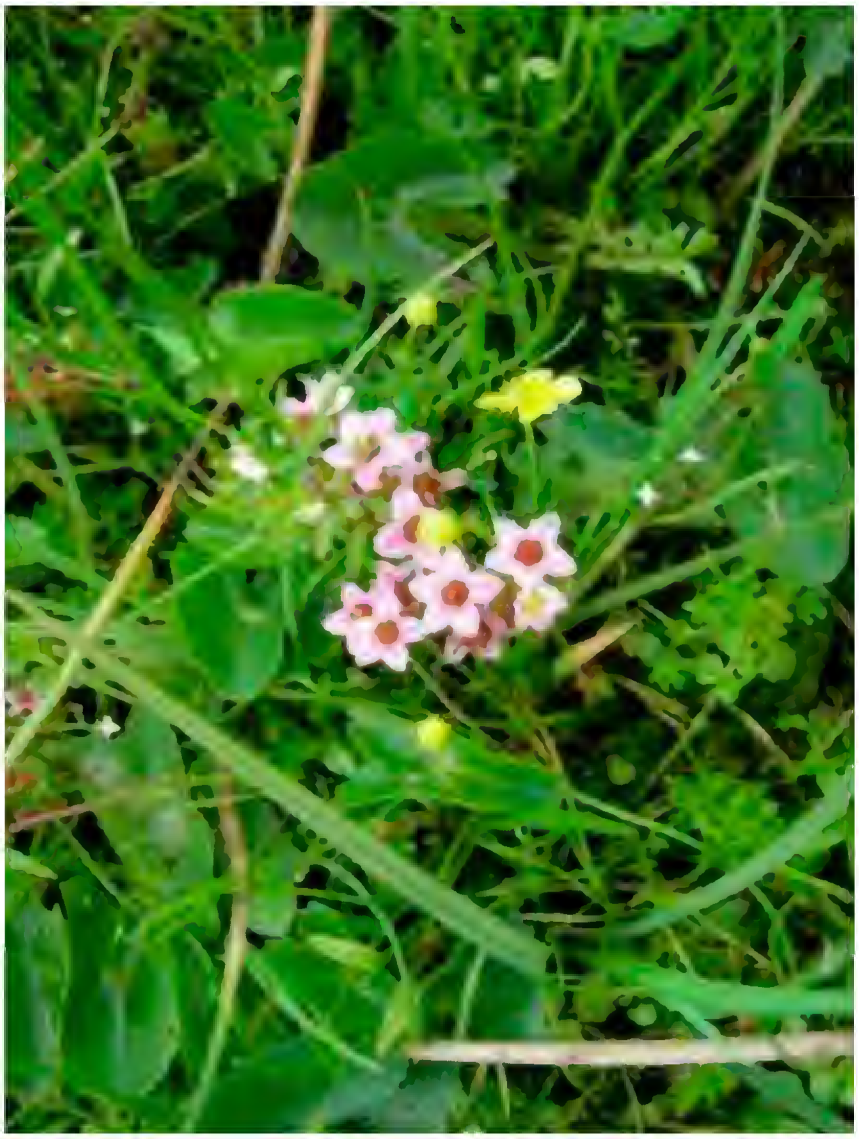
Sites with at least moderately good habitat	GR – NT
Lammerlaw Burn, Crib Law, north section	5160, 5260
Wester Black Burn	5860

Habitats

The **heather moorland** is almost exclusively managed by muirburn optimised to the grouse-shooting interests. This is not a happy outcome from a botanical viewpoint as it leaves very uniform species-poor communities. While the moors can never have been at all species-rich it is the peatland communities that have suffered most. Nevertheless this hectad contains almost all the deep **blanket bog** remaining in Berwickshire. There are only modest pockets with active *Sphagnum* moss and these lie mainly on wet slopes. Here survive four colonies of *Rubus chamaemorus* Cloudberry over a total area of about ten hectares, at the relatively low altitude for this montane species of 460m to 500m.

***Sedum villosum* flush Wester Black Burn 2010**

The Lammerlaw Burn has rewards for the botanist in a series of **flushes** and with **woodland axiophytes** surprisingly well represented. The flushes near the burn are only modestly species-rich but two small side burns have excellent acid flushes with *Sedum villosum* Hairy Stonecrop. There also is an upland form of *Veronica serpyllifolia* Thyme-leaved Speedwell with deeper blue flowers than normal on few-flowered racemes. It does not, however, correspond to *subsp. humifusa*. A third rivulet leads quite high up Crib Law to base-rich flushes with *Sagina nodosa* Knotted Pearlwort, *Equisetum sylvaticum* Wood Horsetail, *Parnassia palustris* Grass-of-Parnassus and what appears to be the hybrid between the Eyebrights *Euphrasia micrantha* and *E. scottica*. Here an upland form of *Cardamine pratensis* Cuckoo-flower occurs with unusually large leaflets that feel thick and leathery to the touch. Normal, smaller, forms of this species occur alongside. There is a modestly extensive colony of *Vaccinium vitis-idaea* Cowberry nearby.



***Sedum villosum* with a small-flowered form of *Caltha palustis* Wester Black Burn 2010**

The burnsides below Meikle Says Law are extraordinarily species-poor, though one steep bank has *Listera cordata* Lesser Twayblade in *Sphagnum* moss. However near Wester Black Burn there is one fine feature: a strong spring feeds a series of **acid flushes** with *Sedum villosum* Hairy Stonecrop, a small-flowered form of *Caltha palusris* Marsh Marigold and *Carex curta* White Sedge with some slightly less-acid flushes adjoining.

NT63 Mertoun

(Systematic sample surveys 1995, 2011)

Overview

47% of the hectad NT63 is in Berwickshire. It lies between 49m by the Tweed below Dalcove and 266m at Brotherstone Hill.

The geology is largely Old Red Sandstone but the basaltic lavas of the Kelso traps and related intrusive rocks form most of the prominent features and are responsible for much of the botanical interest. These features are Redpath Hill, Butchercote Craigs, Brotherstone Hill, the craigs along the north side of the Eden Water near Nenthorn and Hareheugh Craigs. The botanical interest relates largely to grassland on thin soils.

The River Tweed turns south above Mertoun Bridge and near there, at the turn, steep eroding banks provide a habitat of interest. Below this is the Tweed meanders around Mertoun House with no specialist habitats on the Berwickshire bank. The substrate is Old Red Sandstone and the lack of suitable holdfasts may be the reason for the absence of most of the specialist aquatic species of the Tweed. Hollows in the rolling landform leave a varied series of wetlands at Bemersyde Moss, Whitrig Bog, Redpath Moss, Brotherstone Moss, Mincie Moss and Lurgie Loch.

There is productive farmland on the Old Red Sandstone. Small settlements are found at Clintmains and Nenthorn with the great houses of Mellerstain and Mertoun nearby with their policies. The principal roads are a short section of the A6089 near Nenthorn and the B6404 east from Mertoun Bridge. Other development is limited to a short section of former railway at Purvishaugh and the roadstone quarries at Craighouse and Blinkbonny.

Sites with at least moderately good habitat	**GR - NT**
Mertoun Bridge, Tweedside west of	6032
Dalcove, Tweedside near	6431, 6531
Bemersyde Moss	6033, 6133, 6134
Whitrig Bog	6234, 6235
Butchercote Craigs	6234
Brotherstone Hill	6035, 6036, 6135, 6136
Brotherstone Moss (VC 81 part, also VC 80)	6136
Redpath Moss (see NT53)	6036
Mincie Moss	6338
Mellerstain Policies, Eden Water	6438, 6439, 6538, 6539, 6639
Muckle Thairn, Little Thairn	6537, 6637
Girrick, Blinkbonny	6637, 6638, 6639, 6738
Lurgie Loch	6739
Hareheugh Craigs (see NT64)	6839
Hareheugh Craigs, craig near (see NT64)	6939

Habitats

The **grassland** of the basalt is the main feature of the hectad and is notable for its annual species, but it is much fragmented. At Butchercote Craigs the populations of the scarcer annuals on the knowes are localised but *Cerastium semidecandrum* Little Mouse-ear, *Filago vulgaris* Common Cudweed, *Montia fontana subsp. chondrosperma* Blinks, *Myosotis ramossisima, Scleranthus annuus* Annual Knawel, *Sherardia arvensis* Field Madder, *Stellaria pallida* Lesser Chickweed, *Trifolium arvense* Hare's-foot Clover, *Trifolium striatum* Knotted Clover and *Vicia lathyroides* Spring Vetch are all present and fully representative of this specialised flora. Perennial species include *Helianthemum nummularium* Common

Rockrose and *Koeleria macrantha* Crested Hair-grass with *Dianthus deltoides* Maiden Pink and *Primula veris* Cowslip. The *Dianthus* is a perennial whose populations are often a mixture of long-lived plants in secure rock crevices and of more or less annual plants on sandy areas. *Viola lutea* Mountain Pansy is found on the more acid ground. *Saxifraga granulata* Meadow Saxifrage is technically a perennial but it reproduces mainly by bulbils which sometimes allow it to function as a pseudo-annual. There are also base-rich flushes with *Dactylorhiza incarnata* Early Marsh-orchid and *Carex viridula subsp. brachyrrhyncha* Long-stalked Yellow-sedge. Brotherstone Hill to the north is more acid and, while it has only a few of the annuals, it is home to a very extensive population of *Viola lutea* Mountain Pansy. Moreover it has vestiges of former moorland with an excellent population of *Genista anglica* Petty Whin near a tiny peat bog which has *Drosera rotundifolia* Round-leaved Sundew and *Vaccinium oxycoccos* Cranberry. A small rock outcrop by the Covehouse Burn with *Geranium pusillum* Small-flowered Crane's-bill, *Trifolium striatum* Knotted Clover and *Vulpia bromoides* Squirrel-tail Fescue is being quarried but *Viola tricolor* Wild Pansy is present in an arable field nearby.

The Eden Water at Muckle Thairn 2007

A further series of sites is found to the north of the Eden Water between Mellowlees Bridge and Nenthorn. The knowes at Muckle Thairn and Little Thairn occupy an attractive site overlooking the Eden. The proportions of the annuals differ from those at Butchercote but the species are similar and include *Arabis hirsuta* Hairy Rock-cress, *Cerastium semidecandrum* Little Mouse-ear, *Erodium cicutarium* Common Stork's-bill, *Myosotis ramossisima, Scleranthus annuus* Annual Knawel, *Sherardia arvensis* Field Madder, *Trifolium arvense* Hare's-foot Clover, *Trifolium striatum* Knotted Clover, *Vicia lathyroides* Spring Vetch and *Vulpia bromoides* Squirrel-tail Fescue. There is *Carex muricata subsp. lamprocarpa* Prickly Sedge alongside the *Dianthus deltoides* Maiden Pink. The populations of *Lactuca virosa* Great Lettuce and *Malva moschata* Musk Mallow may well be native, though their status is sometimes debated, while *Valerianella carinata* Keeled-fruited Cornsalad seems likely to be a neophyte. Some wetland interest is to be found by the Eden where *Senecio aquaticus* Marsh Ragwort grows along with the hybrid *S. x ostenfeldii.* Girrick and Blinkbonny are home to an extensive series of knowes where the former extent of the grassland communities on the basalt is at its most apparent. At Girrick, west of the lane to Nenthorn, there are small ungrazed knowes with a little *Dianthus* and *Scleranthus.* To the east of this lane, but south of the lane to Mellowlees Bridge, the best-preserved habitat in the series lies in the field next to Girrick and along the southeast side of the triangular field to its east. Here quite large populations of *Dianthus* survive, again with *Scleranthus.* Small colonies of *Sherardia, Trifolium arvense* Hare's-foot Clover and *Trifolium striatum* Knotted Clover are also present with *Helianthemum* Rockrose and *Saxifraga granulata* Meadow Saxifrage rather local. Here there are also wetland habitats, not in the best of condition, but the flushes still hold *Eleocharis quinqueflora* Few-flowered Spike-rush, *Triglochin palustre* Marsh Arrowgrass and *Valeriana dioica* Marsh Valerian. North of the lane to Mellowlees Bridge the grassland is mainly reseeded and fertilised, but even so there is considerable interest on the small knowes with *Scleranthus* remarkably widespread along with *Geranium pusillum* Small-flowered Crane's-bill. *Malva moschata* Musk Mallow appears again here. At the A6089 there is a surprising colony of *Dianthus* on a low basalt wall and the fields towards Blinkbonny Quarry have further small colonies of *Dianthus, Erodium cicutarium* Common Stork's-bill and *Scleranthus*. The lane to Mellowlees Bridge is itself of interest for its colonies of *Agrimonia eupatoria* Agrimony, *Knautia arvensis* Field Scabious and *Silene vulgaris* Bladder Campion.

Lurgie Craigs is only a small feature and, being partly ungrazed, has lost some of the habitat suitable for annuals. *Montia fontana subsp. chondrosperma* Blinks and a large colony of *Scleranthus* are found on almost bare rock ledges. East, across the Sweethope to Stenmuir road, stands Hareheugh Craigs, much the best grassland site in the hectad. Part lies in the hectad NT64 and it is described under that hectad along with a separate knowe to its east.

The **woodland** interest in the hectad is very modest. The steep river banks northwest of Mertoun Bridge have colonies of *Clinopodium vulgare* Wild Basil, *Origanum vulgare* Wild Marjoram and *Lactuca virosa* Great Lettuce. The latter is also present on a cliff in the section of the wood further to the west. An eroding bank by the river has a modest colony of *Centaurium erythraea* Common Centaury. To the south of Mertoun Bridge there is more woodland with steep banks, but not eroding to the extent of those north of the bridge. Here, and at the riverside below, may be found *Campanula latifolia* Giant Bellflower, *Scirpus sylvaticus* Wood Club-rush, *Senecio aquaticus* Marsh Ragwort and *Stellaria nemorum* Wood Stitchwort. The *Campanula* is especially fine on an island below Mertoun House. Rather similar riverside woodland is found below Dalcove where *Adoxa moschatellina* Moschatel and *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage are additional species.

There is fine policy woodland at Mertoun House and Mellerstain. *Festuca heterophylla* Various-leaved Fescue has naturalised in such woodland at Mellerstain and there is a large colony of *Leontodon saxatilis* Lesser Hawkbit naturalised on a bank on the lawn above the lake.

Leontodon saxatilis **Mellerstain 2011**

Moorland has gone from the hectad, with the exception of the remnants at Brotherstone Hill referred to above, but there are a series of plantations and wet fields between Mellerstain and Purvishaugh that contain some natural birchwood with traces of former moorland communities. Racecourse Plantation with its mature pines is one of these. The woods at Mellerstain are attractive but again have limited continuity from former moorland rather than from any former native woodland. *Ceratocapnos claviculata* Climbing Corydalis is frequent, mainly under pines.

Although the moorland has gone a series of mosses remain with a variety of **wetland** habitats. Bemersyde Moss is a eutrophic swamp with large areas of open water. While these conditions are not conducive to a diverse flora, some species poorly represented in Bewickshire thrive. *Bidens cernua* Nodding Bur-marigold is the most characteristic while *Cicuta virosa* Cowbane has only been reported recently and may be new colonisation as would seem to be the case with *Rorippa islandica* Northern Yellow-cress. *Ranunculus* *sceleratus* is frequent. *Silaum silaus* Pepper-saxifrage holds a tenuous existence at the margin. The ponds in the nearby Whitrig Bog also have the *Bidens, Ranunculus sceleratus* Celery-leaved Buttercup and *Rorippa islandica* Northern Yellow-cress, though the latter is more plentiful by seasonal pools nearby. These pools are relicts of the substantial former wetland here that was drained to the Maidenhall Burn through a remarkable stone-lined tunnel built in the early years of the nineteenth century. Brotherstone Moss is shared with VC 80, Roxburghshire, and is willow carr with a little *Narthecium ossifragum* Bog Asphodel. Redpath Moss lies to the west and is described under hectad NT53. Mincie Moss is partly drained but the scrub includes *Salix pentandra* Bay Willow bushes with *Salix repens* Creeping Willow in more open areas. The ditches have a relatively varied aquatic flora with *Berula erecta* Lesser Water-parsnip, *Callitriche hamulata* Intermediate Water-starwort, *Ranunculus trichophyllus* Thread-leaved Water-crowfoot, *Veronica catenata* Pink Water-speedwell and the charophyte *Nitella flexilis/opaca* aggregate.

Bemersyde Moss from the air Borders Regional Council

Lurgie Loch has lost its open water and the acid bog that developed where it lay has now almost scrubbed over with birch and willow. Nevertheless some fen areas remain at the fringes with the last colony in Berwickshire of *Stellaria palustris* Marsh Stitchwort, here associated with *Carex lasiocarpa* Slender Sedge which is widespread in the moss, but does not flower in shade. *Salix repens* Creeping Willow and the hybrid *S. x ambigua* survive rather precariously in the little remaining open habitat. *Corallorhiza trifida* Coralroot Orchid was rather plentiful until recently but now seems to be rare, while *Carex curta* White Sedge, *Pyrola minor* Common Wintergreen and *Salix pentandra* Bay Willow are more secure. *Lemna minuta* Least Duckweed has colonised a pond at the edge of the moss.

Nenthorn House has two **ponds** fed from the Eden Water. At one of these *Potamogeton alpinus* Red Pondweed thrives. This species was formerly known from the Eden itself. The lake at Mellerstain is also fed by the Eden and has the charophyte *Chara globularis/virgata* aggregate. The *Nuphar lutea* Yellow Water-lily there is probably introduced but it could have originated from the Eden nearby where *Sparganium emersum* Unbranched Bur-reed is still present. *Scrophularia umbrosa* Green Figwort is frequent by the Eden. The **River Tweed** is the main habitat for aquatic species but while the Mertoun stretch has *Ranunculus pencillatus* Stream Water-crowfoot neither *Ranunculus fluitans* River Water-crowfoot nor *Potamogeton x olivaceus* Graceful Pondweed have been seen recently, though they could persist. *Poa palustris* Swamp Meadow-grassand a hybrid Yellow-cress *Rorippa x anceps* occur as introductions below Clinthill. *Lysimachia vulgaris* Yellow Loosestrife is now

***Lysimachia vulgaris* below Mertoun House 1995**

plentiful by the Tweed while *Valeriana pyrenaica* Pyrenean Valerian has colonised banks in wooded riverside at Mertoun House.

Though the thin soils associated with the basalt favour **arable weeds**, the reality is rather disappointing. The most dramatic find was a large population of *Fumaria purpurea* Purple Ramping-fumitory in set-aside near Lurgie Craigs in 1999. One plant of *Anthriscus caucalis* Bur Parsley turned up unexpectedly northwest of Millfield in 2002. *Anagallis arvensis* Scarlet Pimpernel is rare while *Galeopsis speciosa* Large-flowered Hemp-nettle, *Lamium amplexicaule* Henbit Dead-nettle and *L. confertum* Northern Dead-nettle are occasional. *Hypericum humifusum* Trailing St John's-wort is occasionally found in set-aside as is *Erysimum cheiranthoides* Treacle Mustard as a probable introduction in turnips. Game crops can bring in some unexpected species such as *Sinapis alba* White Mustard but it is unclear whether the large colony of *Carduus nutans* Musk Thistle found in 2009 below Fans Hill in this habitat is an introduction or not. Its identity is also unresolved as it may all be the hybrid with *C. crispus* Welted Thistle. Recent colonists include *Anisantha diandra* Great Brome near Mellowlees Bridge and *Amsinkia micrantha* at Whitrighill.

Ruderal habitat of great interest was discovered in 2011 on an eroding bank at Dalcove. Here there is a large colony of *Hyoscyamus niger* Henbane with *Ballota nigra* Black Horehound, *Conium maculatum* Hemlock, *Echium vulgare* Viper's-bugloss, *Malva sylvestris* Common Mallow and *Reseda luteola* Weld. All these plants were once used medicinally and their association is strongly suggestive of a link with the mediaeval hospital dedicated to St Mary Magdalene that stood near this spot and was destroyed by the English in 1544. There is little other ruderal interest. *Reseda luteola* Weld seems to be about the only species of note in Craighouse Quarry. The presence of *Carex muricata subsp. lamprocarpa* Prickly Sedge as a colonist in the car park at Nenthorn Church relates to colonies on knowes nearby.

NT64 Gordon

(Systematic sample surveys 1987, 2007)

Overview

All of the hectad is in Berwickshire. It lies between 131m by the Eden Water above Mark's Bridge and 272m at Knock Hill.

This is gently undulating country for the most part underlain with deposits of the Upper Old Red Sandstone, but in the west at Hume Craigs there are conspicuous basaltic lavas from which two prongs project east. The first passes by Middle Third and Byrewalls to Hareford Bridge while the second, which may be earlier, forms the hill at Hexpath. In addition there are a variety of intrusive rocks of Carboniferous age known as the Kelso Traps with olivine dolerite at West Gordon, basalts at Hareheugh Craigs, Bellitaw Craigs and Knock Hill, and also some smaller plugs of conglomerate. In the extreme northeast at Spottiswoode the Old Red Sandstone gives way to Silurian rocks.

The post-glacial history of the hectad is interesting. A small part of the great eskers at Greenlaw Moor form a feature at the northeast but elsewhere there are a series of very extensive alluvial deposits indicating substantial post-glacial lakes. The largest, around Gordon Moss at 140m, extends to about 250 hectares. A second lies between Hume and Gordon and extends to about 150 hectares, again at 140m, and a third between Houndslow and Spottiswoode at 210m is much the same size. A fourth area, much smaller, lies south of Corsbie. The scale of these alluvial deposits much exceeds anything of this type elsewhere in the Scottish Borders.

The village of Gordon is the principal settlement. A main road crossing the hectad is the A697 from Coldstream to Edinburgh. The disused railway between Greenlaw and Earlston also crosses the hectad. There is a small disused quarry at the former railway station in Gordon which is now a pond.

Sites with at least moderately good habitat	GR - NT
Everett Moss	6043
Sheriffmoor Plantation	6147
Gordon Bogs, central section, Gordon Moss SSSI	6342
Gordon Bogs, central section, outwith SSSI	6242, 6342, 6442
Corsbie Fen	6244, 6245
Gordon Bogs, east section, north of Lightfield	6341, 6441
Lightfield Moor, south of Lightfield	6440, 6441
Bonarparte's Covert	6440
Gordon Meadow	6443
Gordon Community Woodland, south of old railway	6543, 6544, 6643, 6644
Gordon Community Woodland, north of old railway	6544, 6644
Halliburton, Blackadder Water near	6648, 6747, 6748, 6847, 6848
Dogden Moss (part NT65)	6749, 6849, 6949, 6750, 6850
Hareheugh Craigs (part NT63)	6839, 6840, 6940
Hareheugh Craigs, craig near (part NT63)	6939, 6940
Hume Craigs (see NT74)	6941
Rumbleton Burn (part NT74)	6945, 7045
Greenlaw Dean (part NT74)	6946, 6947, 6948, 7046
Fangrist Burn	6948, 6949

Habitats

Polytrichum **Bonarparte's Covert 2007**

Woodland of birch and possibly pine must have been extensive in the past, but, except as an aftermath to peat-cutting on the mosses or as fragments associated with conifer plantations, it is only well-represented in this hectad at Bonarparte's Covert, itself recolonisation following the felling of a pine plantation. *Ceratocapnos claviculata* Climbing Corydalis is perhaps the only native species of individual interest in this habitat and is surprisingly widespread. It seems to colonise pine plantations rather readily, but is also present under birch.

The *Linnaea borealis* Twinflower and former *Goodyera repens* Creeping Lady's-tresses of Bonarparte's Plantation may well have been introductions with pine seedlings from the north, though the *Linnaea* now grows under birch. The birch is ageing and site is likely to decline in interest unless colonization of scarce species occurs as pines mature. For the present it retains a very natural feel, largely an illusion derived from the amazing luxuriance of a robust moss, *Polytrichum commune*. There is hardly a fragment of elm or oak woodland with a hint of ancient woodland flora remaining except perhaps at Gordon Common (see below) where *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage occurs near the Eden Water. *Mercurialis perennis* Dog's Mercury and *Silene dioica* Red Campoion are very scarce. The *Mercurialis* occurs at Hareheugh Craigs and under one roadside hedge where it may be an introduction. There is a colony of *Cirsium heterophyllum* Melancholy Thistle in wet birchwood at Sheriffmoor Plantation where *Gymnocarpium dryopteris* Oak Fern is also present.

Heather moorland and grasslands intergrade inextricably in the Scottish Borders and together must have covered much of this hectad a few centuries ago. The moorland has been steadily reclaimed with areas on both sides of the Greenlaw to Gordon road lost shortly before 1987. An unexpected area of moor remained at Gordon Common in 1987 but is now lost, having been drained and planted as Gordon Community Woodland. This was quite species-rich and there have been a number of losses. However *Genista anglica* Petty Whin has thrived in the new woodland rides but unfortunately it is now threatened as the *Calluna* Heather amongst which it grows gives way to rank grasses. There are tiny colonies of *Botrychium lunaria* Moonwort and *Ophioglossum vulgatum* Adder's-tongue Fern but these are unlikely to survive much longer under the trees. Other species present, especially near the burn, are *Berula erecta* Lesser Water-parsnip, *Carex paniculata* Greater Tussock-sedge, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Hydrocotyle vulgaris* Marsh Pennywort, *Salix repens* Creeping Willow, *Saxifraga granulata* Meadow Saxifrage and *Viola lutea* Mountain Pansy. Another moor flanked Dogden Moss. Part survives within the Greenlaw Moor SSSI, but a further part, outwith the SSSI, is now conifer plantation. The moorland habitats south of Lightfield have been progressively degraded over the years, though a few good patches of wet heath remain. *Genista anglica* Petty Whin may or may not survive there. *Apium inundatum* Lesser Marshwort has not been seen recently but a large colony of *Lythrum portula* Water-purslane was discovered in 2012, which was a very wet year.

Areas of acid grassland are now restricted, with the most typical example being perhaps the north side of Knock Hill. There the species diversity is largely concentrated in flushes, except for one small knowe with *Botrychium lunaria* Moonwort and *Viola lutea* Mountain Pansy which is less acid. The juniper formerly known from this site has long been extinct. The best neutral grasslands are found on the prominent geological features of Greenlaw Dean and Hareheugh Craigs. In Greenlaw Dean the Blackadder Water runs through a spectacular cut in the Old Red Sandstone especially striking at De'il's Neuk. *Helianthemum nummularium* Common Rockrose is abundant on some of the outcrops but the associated species are rather modest with *Polygala vulgaris* Common Milkwort, *Leontodon hispidus* Rough Hawkbit, *Helictotrichon pratense* Meadow Oat-grass and *Hieracium* microspecies Hawkweeds some of the highlights. More locally *Saxifraga granulata* Meadow Saxifrage occurs with *Ranunculus bulbosus* Bulbous Buttercup and *Carex caryophyllea* Spring Sedge while a few wet banks have modest quantities of *Geranium sylvaticum* Wood Crane's-bill.

Hareheugh Craigs surrounded by arable fields 1997

Hareheugh Craigs carries some acid heath vegetation on the north side but most of the south-facing craigs are more basic and support notable colonies of *Carex muricata subsp. lamprocarpa* Prickly Sedge and *Dianthus deltoides* Maiden Pink. *Helianthemum nummularium* Common Rockrose is abundant and supports a population of *Aricia artaxerxes subsp. artaxerxes* Northern Brown Argus butterfly while *Helictotrichon pratense* Meadow Oat-grass, *Koeleria macrantha* Crested Hair-grass, three *Hieracium* Hawkweed microspecies and *Viola canina* Heath Dog-violet with its hybrid *V. x intersita* are associates. *Scleranthus annuus* Annual Knawel is locally plentiful on the craigs in some years, with other annuals including *Filago minima* Small Cudweed, *Geranium columbinum* Long-stalked Crane's-bill, *Montia fontana subsp. chondrosperma* Blinks, *Stellaria pallida* Lesser Chickweed, *Trifolium striatum* Knotted Clover and a strong population of a hybrid *Viola* now considered to be *V. arvensis x lutea* which seems to be part annual and part perennial. In the shade on the north of the craigs is a colony of *Ranunculus auricomus* Goldilocks Buttercup. *Saxifraga granulata* Meadow Saxifrage and *Viola lutea* Mountain Pansy are found on the lower slopes while by the site of a medieval farmstead is a small knowe with *Cerastium semidecandrum* Little Mouse-ear and *Myosotis ramosissima* Early Forget-me-not. There is a further small craig to the southeast of Hareheugh with *Cerastium semidecandrum* Little Mouse-ear, *Scabiosa columbaria* Small Scabious and *Scleranthus annuus* Annual Knawel.

Hume Craigs is described under hectad NT74. Tiny craigs at Bellitaw, now much damaged by small-scale quarrying, carry the same flora as the nearby Hume Craigs in a depauperate form with two interesting *Cerastium* species, *C. diffusum* Sea Mouse-ear and *C. semidecandrum* Little Mouse-ear. As a native species *C. diffusum* is nationally largely restricted to the coast but in the Scottish Borders it extends inland on these rocky knowes as far as Hawick. *Vicia lathyroides* Spring Vetch was also present at Bellitaw but has probably now been lost. Greenlaw Kaims are of some limited interest as grassland with *Viola lutea* Mountain Pansy present. A field in Gordon village has an outcrop of the Kelso Traps and supports a fine colony of *Viola lutea* Mountain Pansy. *Anemone nemorosa* Wood Anemone and *Conopodium majus* Pignut are also prominent there.

Roadsides and the old railway line have grassland with a certain component of neophytes, though those on the railway line are now in decline. The relative botanical poverty of the roadsides is indicated by the few small colonies of *Geranium pratense* Meadow Crane's-bill and *Knautia arvensis* Field Scabious and the interest of the railway is perhaps most notable where it crosses Gordon Moss as a habitat for *Botrychium lunaria* Moonwort and *Salix repens* Creeping Willow.

No significant area of **open water** remains from the post-glacial lakes and still waters comprise a few small ponds, an amenity lake at Spottiswoode Loch and a flooded quarry at Gordon village. Their flora is very restricted. *Myrica gale* Bog Myrtle was recorded at Spottiswoode between 1951 and 1955 but is believed to have been an introduction along with *Nuphar advena* Spatter-dock which still prospers in the loch, now with *Elodea nuttallii* Nuttall's Waterweed as a very recent colonist while *Callitriche hermaphroditica* Autumnal Water-starwort is found at Rumbleton.

Two river systems are represented in the hectad: the Eden Water and the Blackadder Water. The Eden Water, with its tributary the Hareford Burn, is largely canalised and sluggish and its flora is linked to that of the wetland which it drains. The aquatic flora has been losing diversity. There is now only a little each of *Ranunculus trichophyllus* Thread-leaved Water-crowfoot, *Potamogeton crispus* and *P. natans* though *Callitriche hamulata* Intermediate Water-starwort and *Sparganium emersum* Unbranched Bur-reed remain more frequent. The burns towards the head of the Eden Water catchment, above and below Hexpathdean and near Meikle Harelaw, have gravel bottoms and are well colonised by *Catabrosa aquatica* Whorl-grass. The Blackadder and its tributary the Fangrist Burn are much brisker and their beds, together with some adjacent ox-bows and ditches are remarkable for frequent large colonies of *Berula erecta* Lesser Water-parsnip approaching its highest altitude in Britain. *Ranunculus circinatus* Fan-leaved Water-crowfoot has been recorded here in the past. *Carex acuta* Slender Tufted-sedge is present in the upper reaches of the Blackadder with much *C. acutiformis* Lesser Pond-sedge.

The **wetland** habitats are diverse and sometimes important ranging from small flushes through wet meadows and haughs to extensive areas of fen and acid peat.

Gordon and Lightfield Mosses are deservedly the most famous. Here a post-glacial lake fed by numerous springs had developed into a varied wetland with wet meadows, spring mires, areas of deep peat with acid bog of *Sphagnum* moss on top and peaty pools and channels. Peat-cutting and drainage in the eighteenth and nineteenth centuries much altered the area. Canalising the Hareford Burn in a stank in 1820 eliminated much of the open water whose margins were formerly colonised by *Lythrum salicaria* Purple-loosestrife, *Ranunculus lingua* Greater Spearwort, *R. sceleratus* Celery-leaved Buttercup, *Hippuris vulgaris* Mare's-tail, *Stellaria palustris* Marsh Stitchwort, *Lemna trisulca* Ivy-leaved Duckweed, *Sparganium minimum* Least Bur-reed, *Utricularia minor* Lesser Bladderwort, *Typha latifolia* Bulrush, various *Potamogeton* Pondweed species and *Carex aquatilis* Water Sedge. Of these only *Lemna trisulca* and *Typha latifolia* now survive, these being found in small quantity in ditches and pools in Gordon Moss. The drainage allowed agricultural improvements which reduced the heath and wet meadows around the margins at Lightfield eliminating *Parnassia palustris* Grass-of-Parnassus and *Trollius europaeus* Globeflower. *Genista anglica* Petty Whin and *Apium inundatum* Lesser Marshwort survived until recently, but the *Apium* at least seems now to have gone. *Cirsium heterophyllum* Melancholy Thistle is still at Gordon Moss. Peat-cutting at Gordon Moss broke up the bog surface and when it was abandoned the cuttings became colonised by birch, creating what is now the largest birchwood in the Scottish Borders. However, much interest remains. Gordon Moss reserve was acquired for its *Platanthera bifolia* Lesser Butterfly-orchid and *Coralorhiza trifida* but it also has a good variety of willows including *Salix pentandra* Bay Willow and *S. phylicifolia* Tea-leaved Willow and superb colonies of *Carex paniculata* Greater Tussock-sedge, *C. disticha* Brown Sedge and *Dryopteris carthusiana* Narrow Buckler-fern together with a surprising variety of wetland and woodland habitats within an outwardly uniform woodland appearance. However the habitat has recently become much more uniform as the wetland has dried out and the open areas have wooded over. *Platanthera* has declined so much that glades have recently been cut to try to recreate suitable habitat for this orchid. The woodland element of the flora includes a large population of *Listera ovata* Common Twayblade, a grove of *Populus tremula* Aspen, several colonies of *Pyrola minor* Common Wintergreen and scattered *Moehringia trinervia* Three-veined Sandwort.

Drainage near Gordon Moss 1986

The areas outwith the wildlife reserve were under immediate sentence of change in 1987 following the then-recent agricultural drainage schemes but were still varied and interesting. The fields north of the Hareford Burn have now been drained and have lost much of their botanical interest, but those south of the burn are largely unchanged and retain good wetland habitat. There are very modest areas of bog with the Cottongrasses *Eriophorum angustifolium* and *E. vaginatum* and a little active *Sphagnum* moss where *Drosera rotundifolia* Round-leaved Sundew and *Narthecium ossifragum* Bog Asphodel are found. These grade into flushed grassland with *Filipendula ulmaria*, *Valeriana officinalis* Common Valerian, *V. dioica* Marsh Valerian, *Hydrocotyle vulgaris* Marsh Pennywort and a variety of associates. The Tower Burn is more open and carries a large population of *Catabrosa aquatica* Whorl-grass which in 1987 was also plentiful elsewhere round Gordon Moss in freshly cut ditches through the peat, but has since declined. Also in the Tower Burn is *Ranunculus hederaceus* Ivy-leaved Crowfoot, a once common species becoming relatively scarce in the county. *Apium nodiflorum* Fool's-water-cress is present in a ditch to the west of the Moss, at its sole extant Berwickshire station.

Everett Moss with *Carex paniculata* 2012

Nothing of significance remains of the former wetlands between Hume and Gordon, where there were old records of *Potamogeton alpinus* Red Pondweed, nor of the drier areas towards Hume Castle with *Genista anglica* Petty Whin, nor indeed of the former wetland between Houndslow and Spottiswoode. The continuing occurrence of *Catabrosa aquatica* Whorl-grass in a ditch through the deposit of fen peat at Howlets Ha' is indicative of its wetland history. Below Corsbie something of interest does still remain. Corsbie Bog itself is a raised moss much cut-over and colonised by birch, though in 1987 it retained enough open moss to support *Vaccinium oxycoccos* Cranberry and a colony of the butterfly *Coenonympha tullia* Large Heath. It no longer supported the *Carex limosa* Bog-sedge formerly known there. *Vaccinium oxycoccos* Cranberry could not be refound in 2007, but the associated woodland still contains abundant *Dryopteris carthusiana* Narrow Buckler-fern. To the southwest, Everett Moss is a more significant wetland. At the east end there is *Juncus acutiflorus* fen with *Valeriana officinalis* Common Valerian, *Equisetum fluviatile* Water Horsetail, *Dactylorhiza purpurella* Northern Marsh-orchid and *Carex paniculata* Greater Tussock-sedge. This is adjoined by a large stand of *Phragmites* Reed with *Angelica sylvestris* Wild Angelica and *Cicuta virosa* Cowbane and this in turn grades into an area with *Carex paniculata* Greater Tussock-sedge, *Juncus* Rush species, *Eriophorum angustifolium* Rosebay Willowherb and plentiful *Cicuta virosa* Cowbane. Behind this is carr woodland with willow and birch associated with *Dryopteris carthusiana* Narrow Buckler-fern. *Catabrosa aquatica* Whorl-grass occurs in a muddy cattle pool at the margin. Curiously, *Filipendula ulmaria* Meadowsweet appears to be absent.

An important peatland of another sort is the fine raised mire of Dogden Moss, perhaps the best preserved such mire in the Scottish Borders. The *Sphagnum* moss and *Eriophorum vaginatum* Hare's-tail Cottongrass have but few associates though *Drosera rotundifolia* Round-leaved Sundew is abundant and *Empetrum nigrum* Crowberry frequent. *Vaccinium oxycoccos* Cranberry is constant across the whole moss, but in varying abundance, while *Narthecium ossifragum* Bog Asphodel occurs in good quantity but more locally. The rare *Trichophorum cespitosum subsp. cespitosum* Northern Deergrass is present in several places and its hybrid with

Trichophorum cespitosum ssp. cespitosum
Dogden Moss 2000

Hybrid *Trichophorum* with pale tops where the flowering heads have fallen Dogden Moss 2000

T. c. subsp. germanicum Common Deergrass, *T. c. nothosubsp. foersteri*, is constant across much of the moss and is sometimes proliferous.

The modest-sized Jordanlaw Moss was somewhat similar but the part remaining today is small in comparison to that planted with conifers in the early 1970's. This fragment has now dried out and no bog community is left.

The richer flush communities are now rare following agricultural activities that have eliminated such species as *Parnassia palustris* Grass-of-Parnassus at Lightfield and Rumbleton but good examples occur well up the Fangrist Burn and there are still flushes by the Rumbleton Burn with *Dactylorhiza incarnata* Early Marsh-orchid and pools with *Catabrosa aquatica* Whorl-grass. The edges of the Fangrist Burn support colonies of *Blysmus compressus* Flat-sedge and *Isolepis setacea* Bristle Club-rush while small flushes carry the community characterised by *Carex dioica* Dioecious Sedge and *Eleocharis quinqueflora* Few-flowered Spike-rush with *Eriophorum latifolium* Broad-leaved Cottongrass, *Euphrasia scottica* Eyebright, *Selaginella selaginoides* Lesser Clubmoss, *Parnassia palustris* Grass-of-Parnassus, *Pinguicula vulgaris* Common Butterwort, *Carex hostiana* Tawny Sedge and *C. viridula subsp. brachyrrhyncha* Long-stalked Yellow-sedge. The flushed areas in the haughs down the Blackadder support *Dactylorhiza incarnata* Early Marsh-orchid with a rich variety of associates including *Blysmus compressus* Flat-sedge. However the best example has now been compromised by the digging of a duck pond.

The **arable weed flora** of the hectad includes *Anchusa arvensis*, *Euphorbia helioscopia* Sun Spurge, *Fumaria muralis* Common Ramping-fumitory, *Galeopsis speciosa* Large-flowered Hemp-nettle, *Lamium confertum* Northern Dead-nettle and *Raphanus raphanistrum* Wild Radish. *Galeopsis speciosa* Large-flowered Hemp-nettle and *Lamium confertum* Northern Dead-nettle are notably widespread and occasionally abundant. *Papaver dubium* Long-headed Poppy and *Thlaspi arvense* Field Penny-cress are now rare but *Matricaria recutita* Scented Mayweed was found in some quantity near Gordon in 1987 and has since become more frequent. Species that are now almost confined to gardens include *Sonchus oleraceus* Smooth Sowthistle, *Urtica urens* Small Nettle and *Veronica agrestis* Green Field-speedwell. Set-aside near Gordon Moss in 2007 revealed the presence of *Fumaria bastardii* Tall Ramping-fumitory, *F. densiflora* Dense-flowered Fumitory, *F. officinalis subsp. wirtgenii* Common Fumitory, *F. purpurea* Purple Ramping-fumitory, *Geranium pusillum* Small-flowered Crane's-bill, *Papaver dubium subsp. lecoqii*, *Persicaria lapathifolia* Pale Persicaria and *Viola tricolor* Wild Pansy. *Mentha arvensis* Corn Mint occurs in a wet field near Gore Bridge. *Bromus hordeaceus subsp. longipedicellatus* was recorded by Hareford Bridge in 2007, but was not very distinct from *subsp. hordeaceus* Soft-brome. Overall, this is a hectad with a notably rich arable weed flora.

Galeopsis speciosa

Wildflower mix sown near Gordon Common 2007

The **neophyte element in the flora** of the hectad was considered minimal in 1988 with *Matricaria discoidea* Pineappleweed and *Veronica filiformis* Slender Speedwell the most evident species. This has been changing. The roadsides have been colonised by the usual range of halophytes and to a lesser extent by the native *Spergularia rubra* Sand Spurrey. *Buddleja davidii* Butterfly-bush and *Allium paradoxum* Few-flowered Garlic have colonised in Gordon village. *Rumex longifolius* Northern Dock (arguable native in Berwickshire) has become quite widespread by roads and in damp places in the unimproved fields, while *Dipsacus laciniatus* Cut-leaved Teasel, *Sinapis alba* White Mustard and *Phacelia tanacetifolia* Phacelia have been planted as game crops. *Anisantha diandra* Great Brome, *Amsinckia micrantha* Common Fiddleneck and *Erysimum cheiranthoides* Treacle Mustard are new arable weeds. A paddock near Gordon Common was planted with a wildflower mix in 2007 which included *Agrostemma githago* Corncockle, *Anthemis arvensis* Corn Chamomile, *Centaurea cyanus* Cornflower and *Chrysanthemum segetum* Corn Marigold. It has since been returned to grass. Recent planting at Howlets Ha' includes *Euonymus europaeus* Spindle and *Viburnum opulus* Guelder-rose.

NT65 Longformacus

(Systematic sample surveys 1989, 2008)

Overview

All of the hectad NT65 is in Berwickshire. It lies between 187m by the Dye Water at Longformacus and 470m on Blythe Edge. While the Upper Old Red Sandstone underlies a strip at the east and south edges of the hectad, there is little productive farmland and the in-bye fields are mainly used as grass in conjunction with more extensive sheep farming, though there is a large cattle enterprise at Flass. Acid Silurian rocks underlie the rest of the hectad, except for the intrusive rocks at the Dirringtons, two hills standing apart from the Lammermuirs. Much of the Dye Water catchment is open grouse moor as is the Watch Water catchment above the Watch Water reservoir. South of Twin Law at 447m is Harecleugh Forest, a large conifer plantation, and nearby the Boondreigh Burn marks the head of the catchment of the Leader Water. The highest summit is Meikle Law at 468m to the north of the Dye Water but the upper slopes Blythe Edge to the south are a little higher.

Longformacus has diverse habitats with burnside woodland and the policies of Longformacus House as well as the ruderal habitats of the village itself. There are few arable fields in the hectad but the recent development of Horseupcleugh as a shooting estate has led to the introduction of annually-cultivated game strips or longer-term sowings. New ponds have been dug there and elsewhere.

Access is available to the upper Dye Water from Byrecleugh and to the upper Watch Water from the reservoir. The Southern Upland Way crosses the hectad from Twin Law to Longformacus.

Sites with at least moderately good habitat	GR – NT
Raecleugh	6051, 6052, 6151
Dye Water cleughs	6057, 6058, 6158
Byrecleugh	6257, 6258, 6358, 6359
Watch Water, upper section	6355, 6356, 6455, 6456, 6556
Trottingshaw, Nuns' Bank	6457, 6458, 6558
Horseupcleugh	6459, 6558, 6559, 6658
Watch Water Reservoir	6556, 6656
Dye Water, Rathburne to Wrunklaw	6658, 6757, 6758, 6857
Dogden Moss, north edge (see NT64)	6750, 6850
Watch Water, Rathburne to Watch Water Reservoir	6756, 6856
Greenlaw Kaims and burns (part NT75)	6950, 6951, 7050, 7051
Dirrington Great Law (part NT75)	6953, 6954, 6955, 7053, 7054, 7055
Crook Burn, Dyeshaugh (part NT75)	6958, 6959, 7058

Habitats

View south from Dirrington Great Law over grouse butts 1993

The **heather moorland** is almost exclusively managed by muirburn optimised to the grouse-shooting interests. This is not a happy outcome from a botanical viewpoint as it leaves very uniform species-poor communities. While the moors can never have been at all species-rich it is the peatland communities that have suffered most. The Lammermuir peats are mostly very thin and active *Sphagnum* moss has now been wholly destroyed over much of the area by centuries of muirburn. Species that have suffered include *Erica tetralix* Cross-leaved Heath, *Eriophorum vaginatum* Hare'r-tail Cottongrass, *Empetrum nigrum* Crowberry and *Vaccinium myrtillus* Bilberry. Species of the drier slopes have continued to prosper, especially *Erica cinerea* Bell Heather which is locally abundant. *Vaccinium vitis-idaea* Cowberry is extraordinarily scarce. It is only on Dirrington Great Law that this species is plentiful: elsewhere there is one good colony near Byrecleugh and a few tiny patches on steep burnside banks with *Sphagnum* moss. These patches of *Sphagnum* moss are also the haunt of *Listera cordata* Lesser Twayblade known in Green Cleugh and in two places up the Watch Water. *Genista anglica* Petty Whin occurs in small quantity on Dirrington Great Law but there is a better colony at Bog Park near Bedshiel where a rather wet area of moor with much *Erica tetralix* Cross-leaved Heath escapes frequent burning.

The botanical interest of the Dye Water cleughs is concentrated in the few slightly base-rich flushes. Green Cleugh has excellent colonies of *Sedum villosum* Hairy Stonecrop while Brock's Cleugh has *Eleocharis quinqueflora* Few-flowered Spike-rush and *Euphrasia scottica* Eyebright, Stot Cleugh *Selaginella selaginoides* Lesser Clubmoss with *Parnassia palustris* Grass-of-Parnassus and Hall Burn *Sagina nodosa* Knotted Pearlwort. The upper Watch Water has *Euphrasia scottica* Eyebright in Easter Grain, an upland population of *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage and two small populations of *Parnassia palustris* Grass-of-Parnassus. *Solidago virgaurea* Goldenrod has one station and there is a little *Vaccinium vitis-idaea* Cowberry. *Euphrasia* Eyebright species, mainly *E. confusa*, are locally abundant on the lower ground. Boondreigh Burn has one good flush with *Carex dioica* Dioecious Sedge, *Eleocharis quinqueflora* Few-flowered Spike-rush, *Euphrasia scottica* Eyebright and *Pedicularis palustris* Marsh Lousewort. There are more acid flush communities with *Carex curta* White Sedge further up the burn. Further base-rich flushes with a similar flora occur in the moorland north of Raecleugh. Additional species there include *Sagina nodosa* Knotted Pearlwort and *Selaginella selaginoides* Lesser Clubmoss. *Euphrasia micrantha* Eyebright occurs in a few places on dry acid banks with sparse *Calluna* Heather as at Heron Scar by the Dye Water where it grows with *Populus tremula* Aspen. *Epilobium brunnescens* New Zealand Willowherb is now widespread in the hill cleughs.

Erosion channel exposing shallow burnt-out peat layer Dunside Hill 2007

Lycopodium clavatum Stag's-horn Clubmoss is almost absent from the moorland, with just a few plants near tracks by the Dye Water, but has colonised quite freely on the stony ditch-banks by forestry tracks in Harecleugh Forest where it is accompanied by a little *Diphasiastrum alpinum* Alpine Clubmoss.

Grassland communities replace the *Calluna* Heather lower in the Dye and Watch Water valleys and there are some excellent examples of communities that favour skeletal soils. Nuns' Bank below Trottingshaws carries fine populations of *Helianthemum nummularium* Common Rockrose and this community is repeated by the Wester Burn at Horseupcleugh and down the Dye to Wrunklaw. On banks above the Wester Burn there are several colonies of *Vicia orobus* Wood Bitter-vetch, at its sole surviving Berwickshire station, and one of *Antennaria dioica* Mountain Everlasting. *Gymnadenia conopsea* Fragrant Orchid is present but rare. Other well-represented species of interest are *Aira caryophyllea* Silver Hair-grass and *Carex caryophyllea* Spring Sedge while *Rosa pimpinellifolia* Burnet Rose occurs on rock ledges above Wrunklaw. Similar grasslands are found near the Watch Water between Rathburne and the reservoir, again with *Antennaria*

Luke Gaskell searching for *Vicia orobus* Wrunklaw 2008

dioica Mountain Everlasting and *Rosa pimpinellifolia* Burnet Rose. *Euphrasia* Eyebright species, particularly *E. confusa*, may be abundant in the acid grasslands at the moorland edge. There is a colony of *Viola lutea* Mountain Pansy on Greenlaw Kaims.

Ancient woodland is rare in the hectad, with the Dye Water burnsides the best example. The trees present include much birch and alder with some oak, elm and ash as well as introduced species. *Sambucus racemosa* Red-berried Elderhas naturalised rather widely. Former woodland is indicated by an unexpected colony of *Phegopteris connectilis* Beech Fern on a wet bank near Trottingshaw. Between Wrunklaw and Rathburne, *Carex laevigata* Smooth-stalked Sedge occurs in what is, in effect, a wet woodland-edge community while *Salix phylicifolia* Tea-leaved Willow is quite frequent by the Dye Water from above Wrunklaw to near Rathburne. *Rubus saxatilis* Stone Bramble is found under a rock by a shady pool at Heron's Hole. Hereabouts *Cardamine amara* Large Bitter-cress, *Equisetum sylvaticum* Wood Horsetail, *Gymnocarpium dryopteris* Oak Fern, *Prunus padus* Bird Cherry and *Solidago virgaurea* Goldenrod are more or less frequent. *Cirsium heterophyllum* Melancholy Thistle is present with *Populus tremula* Aspen near the foot of Watch Water. *Geranium sylvaticum* Wood Crane's-bill is notably plentiful right through to Longformacus with a little *Adoxa moschatellina* Moschatel, *Campanula latifolia* Giant Bellflower and *Ceratocapnos claviculata* Climbing Corydalis. Longformacus strip, to the north of the village, is a beech plantation with old trees and some birch. Here *Pyrola minor* Common Wintergreen flourishes and a small clump of *Carex muricata subsp. lamprocarpa* Prickly Sedge survives.

There are several **wetland** habitats additional to the flush communities of the cleughs. The north edge of the raised mire at Dogden Moss falls in the hectad and here the lagg is especially well preserved and *Vaccinium oxycoccos* Cranberry occurs in peaty areas between the mire proper and the kaims. Just north of the kaims there is a network of small burns and wetland, part drained, indicative of a former glacial lake. Here *Carex dioica* Dioecious Sedge, *Dactylorhiza incarnata* Early Marsh-orchid, *Eleocharis quinqueflora* Few-flowered Spike-rush, *Euphrasia scottica* Eyebright, *Sagina nodosa* Knotted Pearlwort, and *Selaginella selaginoides* Lesser Clubmoss are present in the flushes where *Parnassia palustris* Grass-of-Parnassus is rather fine. *Salix repens* Creeping Willow is occasional. The burns themselves have frequent *Veronica x lackschewitzii* Hybrid Water-speedwell with *Berula erecta* Lesser Water-parsnip, *Callitriche hermaphroditica* Autumnal Water-starwort and *Ranunculus trichophyllus* Thread-leaved Water-crowfoot. *Blysmus compressus* Flat-sedge by the Fangrist Burn is an outlier of the main colonies downstream. *Genista anglica* Petty Whin has a good colony at Bog Park where a wet area of moor with much *Erica tetralix* Cross-leaved Heath escapes frequent burning. Polwarth Moss to the east has what is probably the largest colony of *Salix repens* Creeping Willow in Berwickshire. A very different community occurs by the Crook Burn, Dyeshaugh where a bank with a strong spring line has wet areas with *Carex paniculata* Greater Tussock-sedge, *Cirsium heterophyllum* Melancholy Thistle and a fine colony of *Trollius europaeus* Globeflower. By the Millknowe Burn northeast of Bedshiel there is a wet field with a large population of *Ophioglossum vulgatum* Adder's-tongue Fern.

The **open water** of Watch Water Reservoir has much *Littorella uniflora* Shoreweed and *Ranunculus peltatus* Pond Water-crowfoot while *Lythrum portula* Water-purslane occurs near the boathouse and the charophyte *Nitella flexilis* has been recorded. Grazing is excluded from the banks of the reservoir and here *Salix repens* Creeping Willow is rather frequent with *Equisetum sylvaticum* Wood Horsetail amongst the un-burnt heather.

Arable weeds are poorly represented in the hectad for want of habitat. *Galeopsis speciosa* Large-flowered Hemp-nettle is found near Longformacus and Westruther while *Lamium confertum* Northern Dead-nettle has been recorded near Watch Water Reservoir. Game crops near Horseupcleugh include *Secale cereale* Rye and *Phalaris arundinacea* Reed Canary-grass.

Neophytes naturalised near Longformacus include *Claytonia sibirica* Pink Purslane by the Dye Water, *Scilla lilio-hyacinthus* Pyrenean Squill in several places in the policies of Longformacus House and *Allium* *paradoxum* Few-flowered Garlic in the village. *Veronica polita* Grey Field-speedwell occurs as a garden weed at Longformacus and Westruther.

The **roadsides**, especially the B6456, have the usual halophytes, *Atriplex prostrata* Spear-leaved Orache, *Puccinellia distans* Refelexed Saltmarsh-grass and *Spergularia marina* Lesser Sea-spurrey. Near Bedshiel *Juncus ambiguus* Frog Rush has colonised the roadside. When first found at the end of July 2002 it had turned a conspicuous red colour and formed a dramatic strip for 350m, easily distinguished from the straw-coloured *J. bufonius* Toad Rush which was also present

NT66 Cranshaws

(Systematic sample surveys 1998, 2011)

Overview

Only 16% of the upland hectad NT66 is in Berwickshire. It lies between 174m by the Whiteadder Water below Smiddyhill and 451m on the slopes of Meikle Law in the heart of the Lammermuirs. Much of the land is open grouse moor or grassland on acid Silurian rocks but the southeast corner below Smiddyhill is on the Old Red Sandstone and is cultivated. In the west a modest area of land near Meikle Law drains to the Dye Water. The remainder drains to the Whiteadder Water. The Whiteadder Reservoir and the north side of the Whiteadder around 'The Bell', a birchwood, fall in the vice-county of East Lothian, though The Bell is now in the Scottish Borders Region.

There are a series of forestry shelter belts around Cranshaws House and a long-established pond. Some smaller ponds have been dug there quite recently.

Cranshaws hamlet boasts a church.

Sites with at least moderately good habitat	GR - NT
Killmade Burn, Rough Cleugh (VC 81 part, also VC 82)	6561, 6661, 6662, 6663
Hare Burn	6963

Habitats

The modest area of **species-poor moorland** near Meikle Law that falls in the hectad has two small populations of *Vaccinium vitis-idaea* Cowberry.

Below Duddy Bank there are modest flushes by Crow Cleugh and Little Crow Cleugh and the heathery banks here have a good colony of *Lycopodium clavatum* Stag's-horn Clubmoss, recorded here in 1967, 1983 and 2010 giving it a continuity that is unusual in Berwickshire. *Vaccinium vitis-idaea* Cowberry grows nearby at 300m. Two colonies of *Sedum villosum* Hairy Stonecrop found in 1983 had disappeared by 2010. *Carex dioica* Dioecious Sedge and *Euphrasia scottica* Eyebright are present in small quantity in flushes up Little Crow Cleugh.

Killmade Burn, with its associated cleughs, is perhaps the finest **hill burn** in Berwickshire with vestiges of woodland and small base-rich flushes. Only the east bank is in the vice-county but similar habitat occurs on both banks. There is birchwood near the foot of the burn and, much further upstream above Rough Cleugh, there is a narrow wooded gorge with a little *Prunus padus* Bird Cherry. *Geranium sylvaticum* Wood Crane's-bill, *Gymnocarpium dryopteris* Oak Fern and *Solidago virgaurea* Goldenrod are also found in the gorge with *Hyacinthoides non-scripta* Bluebell in the cleughs nearby. There are a series of flushes near the burn but much the most species-rich is near the foot of Rough Cleugh with *Carex dioica* Dioecious

Sedge, *Eriophorum latifolium* Broad-leaved Cottongrass, *Euphrasia scottica* Eyebright and *Selaginella selaginoides* Lesser Clubmoss. A little *Antennaria dioica* Mountain Everlasting was seen in 1998 on a dry bank close by, but was not refound in 2010. *Sedum villosum* Hairy Stonecrop was found in two places by the main burn in 1998 but was only refound in very small quantity at one of these in 2000 and not at all in 2010. A steep bank near Berrybank Wood and not far from the foot of Killmade Burn has a small colony of *Vaccinium vitis-idaea* Cowberry. Hinds Cleugh to the east is much less interesting. Near the foot of Hinds Cleugh *Lycopodium clavatum* Stag's-horn Clubmoss grows at the top of a small scree slope and *Spergularia rubra* Sand Spurrey is to be found on a sandy track.

BNC party Killmade Burn 2000

The Whiteadder downstream of Killmade Burn has a number of haughs which are very incompletely drained and some **wetland** species are in evidence such as *Potentilla palustris* Marsh Cinquefoil, *Ranunculus aquatilis* Common Water-crowfoot, *Ranunculus peltatus* Pond Water-crowfoot, *Senecio aquaticus* Marsh Ragwort and *Veronica scutellata* Marsh Speedwell. The Whiteadder itself is colourful with *Mimulus* Monkeyflower species including *M. luteus* (*sensu* Stace). Below Cranshaws the haughs are on the Old Red Sandstone and have a very different flora with **grassland** species such as *Anthyllis vulneraria* Kidney Vetch, *Leontodon hispidus* Rough Hawkbit and *Rhinanthus minor* Yellow-rattle. However there is little such habitat as the haughs are cultivated. *Linaria vulgaris* Common Toadflax grew on a crag by the Whiteadder at the foot of Howbog Burn but could not be refound in 2011. The crumbling face of the crag is very wet and has a good colony of *Pinguicula vulgaris* Common Butterwort. *Ceterach officinarum* Rustyback Fern grew on Smiddyhill Bridge in 1986, but it was lost when the bridge was repointed a few years later.

The **policies, shelter belts and small burns** around Cranshaws House have but modest botanical interest. *Potamogeton obtusifolius* Blunt-leaved Pondweed was found in the main pond in 1997. *Hypericum humifusum* Trailing St John's-wort and *Equisetum sylvaticum* Wood Horsetail are present by the Well Burn where *Rubus spectabilis* Salmonberry is all-too-well naturalised in a small dean.

On the hill behind Cranshaws, both Long Cleugh and Quarrel Cleugh have acid flush communities where *Viola palustris* Marsh Violet is rather plentiful and supports a population of the butterfly *Argynnis aglaia* Dark Green Fritillary. There is also a little *Equisetum sylvaticum* Wood Horsetail. *Lycopodium clavatum* Stag's-horn Clubmoss was found in 2011 on a bare area by a small broken dam.

Only the south bank of the Hare Burn is in Berwickshire but it is this bank which boasts the best **flush communities** with much *Pedicularis palustris* Marsh Lousewort. *Euphrasia scottica* Eyebright, *Narthecium ossifragum* Bog Asphodel and *Pinguicula vulgaris* Common Butterwort are also present.

The **arable** fields are not very rich in weeds except for one steep field near Smiddyhill with *Fumaria purpurea* Purple Ramping-fumitory, *Galeopsis speciosa* Large-flowered Hemp-nettle and *Persicaria lapathifolium* Pale Persicaria.

NT73 Birgham

(Systematic sample surveys 1995, 2011)

Overview

Only 9% of the hectad NT73 is in Berwickshire. It lies between 18m by the Tweed below Birgham Haugh and 85m at Newton Don. It falls into two separate main sections: that around the mansion at Newton Don and that around the village of Birgham. Separate again are some tiny parcels of land which are not considered here.

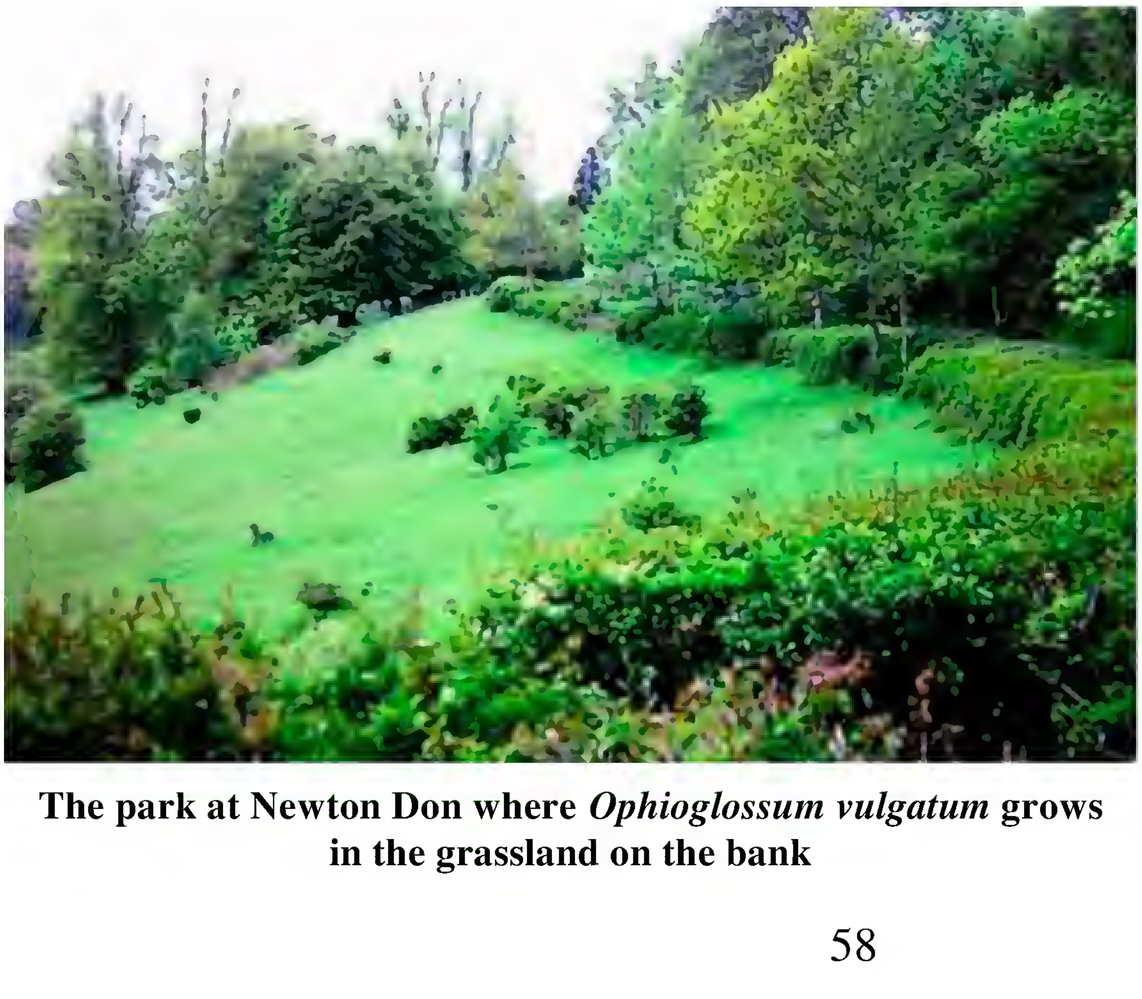
Stichill Linn on the Eden Water at Newton Don marks the boundary between the basalt lavas of the Kelso Traps and the Carboniferous sandstones and is an unexpectedly dramatic feature in a gentle landscape. The basalt is exposed on the banks above the north side of the burn and at knowes in the fields towards Stichill which fall in Roxburghshire. The park at Newton Don lies on the Carboniferous. The Carboniferous sandstones continue east to Birgham and, just below Birgham, there is a limestone feature on the north bank of the Tweed at the boundary with hectad NT83.

Newton Don is set in fine landscape and there is botanical interest in its policies. Birgham Wood stands on the site of former moorland. It is a plantation with oak as well as conifers within which there is some wetland. There is scrubby woodland on the banks of the River Tweed below Lochton and Springhill and again just below Birgham Haugh while the aquatic flora of the river is some interest.

The village of Birgham is the only settlement.

Sites with at least moderately good habitat	GR - NT
Newton Don (VC 81 part, also VC 80)	7036, 7037, 7136, 7137
Carham, Tweed opposite (part NT83)	7938, 8038, 8039
Birgham Wood (part NT74, NT84)	7939, 7940, 8040

Habitats



The park at Newton Don where *Ophioglossum vulgatum* grows in the grassland on the bank

Newton Don has **wooded burnsides and a park**. Its flora was noted in some detail in the *History* of the Berwickshire Naturalists' Club in 1893 by W Wood with further notes in 1938 by J Brown but there are difficulties in guessing the exact areas botanised by these men and thus in knowing which records related to Berwickshire and which to Roxburghshire. Species that have apparently been lost from the woods include *Epipactis helleborine* Broad-leaved Helleborine, *Listera ovata* Common Twayblade and *Pyrola minor* Common Wintergreen, just the sort of species that could have been overlooked since.

Potentilla argentea has long been known as a speciality of Stichill

Linn and it just survives on the Roxburghshire bank. It is not known for certain whether it ever grew on the Berwickshire bank. The rocks near the linn hold one of the very Berwickshire few populations of *Cystopteris fragilis* Brittle Bladder-fern on a natural substrate but it is uncertain whether it is native or a well-naturalised introduction. The source of the *Polystichum setiferum* Soft Shield-fern is similarly unclear. The wooded burnsides still have a varied flora with *Campanula latifolia* Giant Bellflower, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Sanicula europaea* Sanicle and *Senecio aquaticus* Marsh Ragwort. The grassland in the park has a bank with a well-preserved flora including *Ophioglossum vulgatum* Adder's-tongue Fern, *Primula veris* Cowslip and *Saxifraga granulata* Meadow Saxifrage. Nearby, a variety of bluebells has naturalised. It appears that *Hyacinthoides non-scripta* Bluebell, *H. hispanica* Spanish Bluebell and *Hyacinthoides x massartiana* Hybrid Bluebell have all been planted, as more or less discrete patches of each can be found, but there has also been hybridization. The wooded drives and park have an interesting assemblage of introduced species of shaded habitats with *Poa chaixii* Broad-leaved Meadow-grass, *Luzula luzuloides* White Woodrush and *Carex divulsa subsp. leersii* Leers' Sedge. At least some of the *Poa nemoralis* Wood Meadow-grass is also likely to have been sown. *Mycelis muralis* Wall Lettuce is thought to be an associated introduction.

The **pond** has silted up and is completely dominated by *Glyceria maxima* Reed Sweet-grass. First recorded here in 1938, its introduction here has probably helped it spread all too abundantly to many places by the lower Tweed, though it was first recorded for the Tweed below Gainslaw, v.c. 68, in 1904. This is also one of the policies to which *Heracleum mantegazzianum* Giant Hogweed is thought to have been deliberately introduced, though Riddell, by the Ale Water in Roxburghshire, is generally considered to have been the first point of introduction in the area for that species.

The **walled garden** is home to two *Veronica* species that are weeds of this specialised habitat, *V. peregrina* American Speedwell and *V. polita* Grey Field-speedwell.

Leaves of *Cirsium heterophyllum* glade in Birgham Wood 1983

Birgham Wood is part of a complex of former bogs and sandy moorland, once known as Birgham Muir, that falls in four hectads, but mainly NT73, NT74 and NT84. Only Birgham Wood is described here. The northwest part is mainly conifer plantation but there is a strip on the southwest side with old oaks and some pine, beech and birch. Here there are fine colonies of *Pyrola minor* Common Wintergreen. The wet woodland tracks are home to a large population of *Mentha arvensis* Corn Mint. The southeast part of the wood is wet and there is some willow carr, however a pond has recently been dug here and some of the best wetland communities have been lost. All the *Carex vesicaria* Bladder Sedge and half the *Cirsium heterophyllum* Melancholy Thistle have been casualties though a large patch of *Cirsium heterophyllum* Melancholy Thistle remains to the northeast of the pond and to the southwest there is a splendid colony of *Equisetum x litorale* Shore Horsetail with *Carex riparia* Greater Pond-sedge nearby. *Prunus padus* Bird Cherry and *Viburnum opulus* Guelder-rose have been amongst recent plantings. The lane at the southwest end of the wood has a colony of *Sedum telephium* Orpine, but this is considered to have arisen from garden material dumped there at some time in the past.

On a bank above the **River Tweed** at Lochton there are colonies of *Dianthus deltoides* Maiden Pink and *Clinopodium vulgare* Wild Basil. In scrub below is *Lathraea squamaria* Toothwort with *Carex acuta* Slender Tufted-sedge at the river's edge. Just upstream there is a thicket of willows by the river. Here, in a glade, there is a small colony of *Poa palustris* Swamp Meadow-grass on bare alluvium. A little downstream below Springhill *Potamogeton perfoliatus* Perfoliate Pondweed, *P. x salicifolius* Willow-leaved Pondweed and *Ranunculus x kelchoensis* Kelso Water-crowfoot have been found in the river. The wood downstream of Birgham Haugh has large specimens of *Prunus padus* Bird Cherry, but these appear to have been introduced. There are also wet seepages with *Eupatorium cannabinum* Hemp-agrimony, the upstream limit for this species. A **limestone outcrop** at the hectad boundary has *Rosa rubiginosa* Sweet-briar and *Rubus caesius* Dewberry with, in NT83 only, *Cerastium arvense* Field Mouse-ear, *Echium vulgare* Viper's-bugloss and *Galium boreale* Northern Bedstraw. *Allium carinatum* Keeled Garlic has recently colonised on riverside rocks nearby. *A. vineale* Wild Onion may also be a relatively recent colonist. *Rosa rubiginosa* Sweet-briar may well be native. The limestone is best exposed for 100m at the 10km square boundary. *Stellaria neglecta* Greater Chickweed occurs by the river but may be an introduction. *Ranunculus fluitans* River Water-crowfoot is in the river nearby.

A **grass bank** between Birgham Haugh and the village has *Geranium pusillum* Small-flowered Crane's-bill with *Medicago arabica* Spotted Medick as a naturalised introduction, perhaps derived from plants that occurred as wool aliens by the river, though this species can also be introduced when lime is spread on fields. These fields have a fine population of *Ranunculus bulbosus* Bulbous Buttercup.

The lane below the **village** of Birgham has colonies of *Ballota nigra* Black Horehound, *Malva neglecta* Dwarf Mallow, *Silybum marianum* Milk Thistle and *Symphytum orientale* White Comfrey. *Buddleja davidii* Butterfly-bush has recently naturalised away from the houses.

Chrysanthemum segetum Corn Marigold was seen as an **arable weed** near Newton Don in 1981 but has not been found since except where sown in Birgham. *Persicaria lapathifolium* Pale Persicaria grows in a damp field corner near the pond that now marks the site of the former Lochton or Crawboat Loch. *Amsinckia micrantha* Common Fiddleneck and *Anisantha diandra* Great Brome at Harrietfield are recent colonists.

Roderick Corner at Andrew Brotherston's classic locality for *Ranunculus x kelchoensis* River Teviot below Roxburgh Castle 2006 (Roxburghshire NT73)

NT74 Greenlaw

(Systematic sample surveys 1998, 2013)

Overview

99% of the hectad NT74 is in Berwickshire. It lies between 82m by the Blackadder Water below Bogend and 285m at Kyles Hill.

Marchmont, much of Greenlaw Moor, Greenlaw and a strip south towards Hume lie on the upper Old Red Sandstone, while Eccles, Leitholm and Charterhall lie on the Carboniferous sandstones. Intrusive rocks outcrop at Kyles Hill, around Hume and near Lintmill Bridge.

A great deal of the hectad is productive arable land with very little botanical interest. Greenlaw Moor is much the largest block of semi-natural habitat. The Marchmont estate nearby has a wide variety of habitats in small parcels, some associated with the Howe Burn. The Blackadder Water is the principal river and although it becomes eutrophic below Greenlaw it has some modestly interesting botanical habitats along its banks. The former moorland and wetland at Birgham Moor is largely lost, leaving Birgham Wood and the partly-drained wetlands of Bishop's Bog and Horse Bog. The intrusive rocks of the Kelso Traps provide the best grassland habitats in the hectad at Hume Mill, Hume Castle, Hume Craigs and Lintmill Bridge.

The town of Greenlaw is the main settlement, with villages at Eccles and Leitholm.

The disused railway from Greenlaw to Duns follows the Blackadder Water and the Howe Burn.

Sites with at least moderately good habitat	GR - NT
Hume Mill	7040
Hume Castle	7041
Hume Craigs (part NT64)	6941, 7041
Rumbleton Burn (see NT64)	7045
Greenlaw Dean (see NT64)	7046
Greenlaw Moor (part): Flourishwalls Burn, Hule Moss, tributaries of Fangrist Burn	7049, 7148, 7149, 7248, 7249
Lintmill Bridge	7246, 7346, 7446, 7447
Marchmont	7347, 7447, 7448, 7449, 7549
Sisterpath	7547, 7548, 7648
Bishop's Bog (Fernyrig Bog)	7840
Birgham Wood (see NT73)	7940
Horse Bog	7940

Habitats

Greenlaw Moor harbours an important winter goose roost at Hule Moss but is profoundly dispiriting to the botanist, especially the section in this hectad. The formerly fine flush at the head of the Flourishwalls Burn was damaged by drainage a number of years ago, a breach of the SSSI regulations. Although *Blysmus compressus* Flat-sedge, *Dactylorhiza incarnata* Early Marsh-orchid, *Sagina nodosa* Knotted Pearlwort and *Selaginella selaginoides* Lesser Clubmoss survive there for the present, their numbers are reduced and their future is uncertain. Only a small section of the rich burnside communities by the Fangrist Burn and its tributaries fall in the hectad. Here there is *Berula erecta* Lesser Water-parsnip with *Blysmus compressus* Flat-sedge and *Selaginella selaginoides* Lesser Clubmoss. Hule Moss itself is a eutrophic reservoir and the more natural moss to the east with *Lythrum portula* Water-purslane is just a small feature. The rest of the moor is over-managed grouse moor where the temporary reappearance of *Genista anglica* Petty Whin in 2002 and *Platanthera bifolia* Lesser Butterfly-orchid in 2000 are but poignant reminders of what might have been. Across the A6105, Woodheads Strip and Blaeberry Plantation lie on former moorland and there is some *Vaccinium myrtillus* Bilberry with *Pyrola minor* Common Wintergreen, which is favoured rather than hindered by the shade of the old beeches in the strip. Fragments of former moorland are preserved within Charterhall Wood.

Walled garden Marchmont 1998

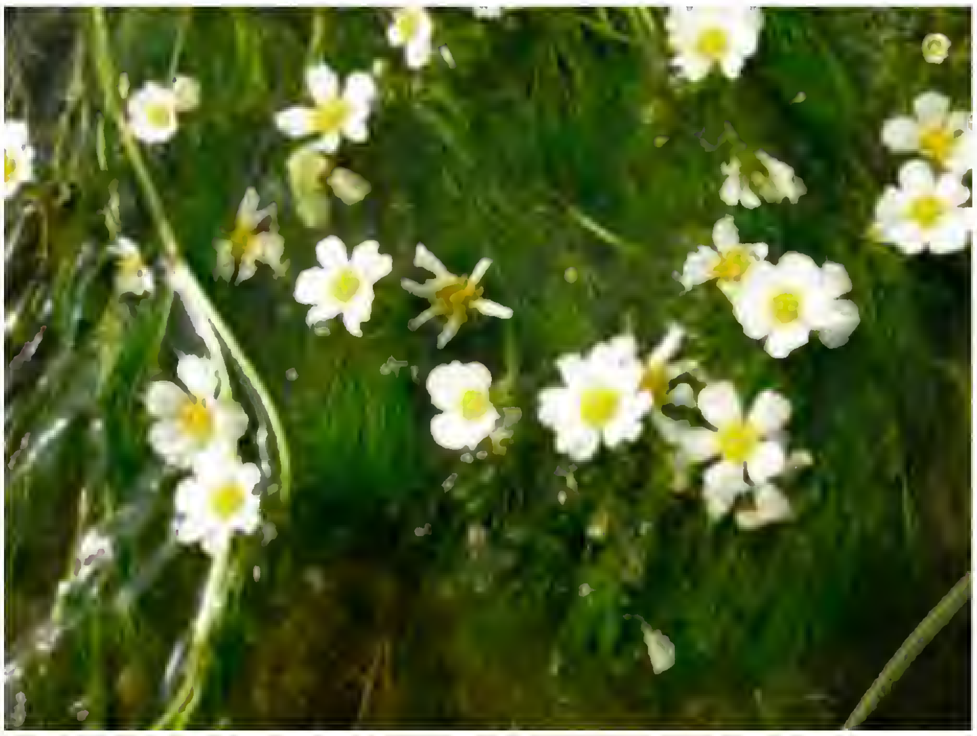
At **Marchmont,** to the south, the mansion lies on a ridge between the Swardon Burn and the Howe Burn, giving the setting for the fine avenue that runs two kilometres northeast from the house. The geology is complex, and weak sections of rock have been gouged out by Ice Age glaciers leaving a marvellously sculpted landscape that has been adapted to inspiring parkland on a very large scale. There are woodland and wetland habitats by the burns with *Allium ursinum* Ramsons, *Carex paniculata* Greater Tussock-sedge, *Equisetum sylvaticum* Wood Horsetail, *Hypericum hirsutum* Hairy St John's-wort, *Valeriana dioica* Marsh Valerian and *V. officinalis* Common Valerian. Lounds Dale has surprisingly large colonies of *Adoxa moschatellina* Moschatel and *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage but *Allium paradoxum* Few-flowered Garlic has now begun to colonise this burnside habitat. The walled vegetable garden was in cultivation with a varied weed flora when visited in 1998 but this is no longer the case. A charophyte, *Chara globularis/virgata* aggregate, was plentiful in a pond in 1998. This pond has now been colonised by *Elodea nuttallii* Nuttall's Waterweed.

***Ranunculus pencillatus* Lintmill Bridge 2013**

The **Blackadder Water** is now too eutrophic for most aquatic species and *Ranunculus circinatus* Fan-leaved Water-crowfoot was last seen there in 1973. However an enigmatic hybrid clone of *Ranunculus* is still quite frequent whose parents have been repeatedly suggested to be *R. circinatus* and *Ranunculus fluitans* River Water-crowfoot. No molecular studies have been made to confirm this. This clone is not known elsewhere in Britain or further afield. The riversides near Sisterpath are moderately rich with *Agrimonia eupatoria* Agrimony, *Berula erecta* Lesser Water-parsnip, *Carex paniculata* Greater Tussock-sedge, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage and *Saxifraga granulata* Meadow Saxifrage. Similar communities are found above and below Lintmill Bridge. *Campanula latifolia* Giant Bellflower is present near Fogo. Here *Sparganium emersum* Unbranched Bur-reed is also recorded, but there is some doubt about the record which has not been refound. *Butomus umbellatus* Flowering-rush has now become frequent by the

Blackadder. *Darmera peltata* Indian-rhubarb has naturalised above Cairns Mill, growing as an emergent aquatic on the bed of the river.

There is a complex of modified habitats that marks the former **Birgham Moor** with Birgham Wood the most interesting. This is described under hectad NT73. Bishop's Bog still has large stands of *Phragmites australis* Common Reed with *Carex riparia* Greater Pond-sedge, *Salix pentandra* Bay Willow and *Solanum dulcamara* Bittersweet while Horse Bog also has *Carex riparia* Greater Pond-sedge. Crown Gorse is plantation with much *Betula pendula* Silver Birch which is possibly native there, unusually for Berwickshire.



'*Ranunculus circinatus x fluitans*' with semi-double flowers often with seven or eight petals 2006

The knowes in a small meadow at Hume Mill had an excellent **grassland** community but this has now been largely lost to whins and a pig paddock. *Ranunculus bulbosus* Bulbous Buttercup is still quite plentiful. *Dianthus deltoides* Maiden Pink was accompanied by *Helianthemum nummularium* Common Rockrose, *Koeleria macrantha* Crested Hair-grass, *Myosotis ramosissima* Early Forget-me-not, *Saxifraga granulata* Meadow Saxifrage, *Scleranthus annuus* Annual Knawel, *Trifolium striatum* Knotted Clover and *Vicia lathyroides* Spring Vetch with *Iris pseudacorus* Yellow Iris by the burn. The building of Hume Castle modified the eminence on which it stands, but *Malva neglecta* Dwarf Mallow has long been naturalised there and small populations of *Geranium pusillum* Small-flowered Crane's-bill, *Saxifraga granulata* Meadow Saxifrage and *Stellaria pallida* Lesser Chickweed survive, but *Vicia lathyroides* Spring Vetch appears to have been lost recently. To the north of the houses, Hume Craigs have similar communities in small quantity. Most of the craigs are acid, with *Montia fontana subsp. chondrosperma* Blinks and *Stellaria pallida* Lesser Chickweed much more widespread than *Sherardia arvensis* Field Madder, *Trifolium striatum* Knotted Clover and *Vicia lathyroides* Spring Vetch. *Viola lutea* Mountain Pansy and *Viola tricolor* Wild Pansy are also present. *Catabrosa aquatica* Whorl-grass occurs in a spring. A further outcrop of the Kelso traps is to be seen in the railway cutting near Lintmill Bridge and on a knowe to the south of the Blackadder nearby. This is now the only known station in Berwickshire for *Plantago media* Hoary Plantain as a native. Other notable species are *Anthyllis vulneraria* Kidney Vetch, *Cerastium semidecandrum* Little Mouse-ear, *Dianthus deltoides* Maiden Pink, *Knautia arvensis* Field Scabious, *Silene vulgaris* Bladder Campion and *Trifolium arvense* Hare's-foot Clover.

Other **wetland** habitats are few. The wetland by the Rumbleton Burn is described under hectad NT64. A pond by the farm at Greenlawdean was a station for *Potamogeton obtusifolius* Blunt-leaved Pondweed in 1998, but this species was not refound in 2013. *Senecio aquaticus* Marsh Ragwort occurs by the Lambden Burn. The pond at Rowchester House has an elaborate Japanese-style bridge with a splendid specimen of *Platanus orientalis* nearby but is not otherwise of botanical interest. Eccles Pools are believed to have a post-glacial origin as kettlehole lakes, but this is hardly evident today though *Carex riparia* Greater Pond-sedge and *C. vesicaria* Bladder Sedge are present.

There are some farmhouses and mansions with **policies** of interest. At Hassington there was formerly fairly pristine habitat in small elm wood where *Tulipa sylvestris* Wild Tulip and an attractive pale form of *Primula* *vulgaris* Primrose are naturalised. However the wych elms have largely succumbed to Dutch elm disease and *Allium paradoxum* Few-flowered Garlic has invaded. The immediate policies at Charterhall have not been botanised but those at Anton's Hill have *Listera ovata* Common Twayblade and *Primula veris* Cowslip. *Milium effusum* Wood Millet is probably an introduction as it is associated with *Luzula luzuloides* White Wood-rush. However *Allium ursinum* Ramsons is plentiful alongside, a rather surprising occurrence for a species that tends to specialise in burnsides in Berwickshire, so there is some evidence of woodland history here.

The **arable weeds** of the hectad are in decline. However several colonies of *Anagallis arvensis* Scarlet Pimpernel and *Viola tricolor* Wild Pansy were found in 2013 and *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle are occasional. *Sinapis alba* White Mustard is one of the species sown as game crops and may persist. Other sowings include *Chenopodium quinoa* Quinoa, *Cichorium intybus* Chicoryand *X Triticosecale rimpaui* Triticale.

Ruderal habitats are modest. There is a long-established colony of *Polygonatum multiflorum* Solomon's-seal in a species-rich roadside near Eccles. In the village itself *Erinus alpinus* Fairy Foxglove is well naturalised on walls. *Lactuca virosa* Great Lettuce occurred as a casual by Puncheon Bridge in 1999, the only recent record away from its usual haunts on cliffs and banks near the River Tweed. Charterhall Airfield has a great abundance of a red-leaved variety of *Sedum album* White Stonecrop on the old runways accompanied by *Vulpia bromoides* Squirrel-tail Fescue and, more surprisingly, by *Rumex longifolius* Northern Dock. The usual halophytes have colonised the major roads.

NT75 Duns

(Systematic sample surveys 1990, 2008)

Overview

All of the hectad NT75 is in Berwickshire. It lies between 75m on the Whiteadder Water below Cumledge and 360m at Hardens Hill.

This is a geologically diverse hectad. While the Upper Old Red Sandstone underlies the larger part of the hectad, there are acid Silurian rocks to the northwest towards Ellemford Bridge and Carboniferous sandstones to the east below Preston on the Whiteadder Water and between Gavinton and Nisbet Hill to the southeast. Intrusive rocks form prominent features at Harelaw Craigs, with its recently-closed road-stone quarry, at Cockburn Law continuing across the Whiteadder to Stoneshiel Hill, at Kyles Hill by Greenlaw Moor and most notably at Dirrington Great Law.

The botanical interest reflects this geological diversity. Nevertheless the habitats are mainly fragmented or, in the case of moorland, much degraded. The moorland, generally species-poor, contains pockets with unexpectedly rich communities. Of considerable local interest are the modest woodland remnants, along the Langton Burn, a few of the other burns and the Whiteadder. Further botanical interest in found in the policies of Duns Castle, most of which are generously made open to the public.

Although Duns is the county town of Berwickshire there is little industrial activity and the ruderal habitats around the town are limited, while the spoil heaps at Harelaw Craigs quarry have modest interest only. Given the variety of soils, the scarcer arable weeds are surprisingly weakly represented.

Sites with at least moderately good habitat	GR - NT
Greenlaw Kaims and burns, east section (see NT65)	7050, 7051
Crook Burn, Dyeshaugh, east section (see NT65)	7058
Dirrington Great Law, east section (see NT65)	7054, 7055
Langtonlees	7352, 7353, 7452, 7552, 7553
Hells Cleugh	7354, 7355, 7454, 7455
Duns Castle	7754, 7755, 7854, 7855
Cockburn Mill	7658, 7757, 7758, 7759
Preston Bridge	7856
Hoardweel	7859, 7959

Habitats

Moorland habitats include part of Greenlaw Moor. The moor itself is burnt with obsessive rigour and has lost almost all its diversity. The only redeeming feature is Polwarth Moss which has what is probably the largest colony of *Salix repens* Creeping Willow in Berwickshire. However the area to the west of the Greenlaw Kaims at Cleckinshaw is a network of burns and flushes at the site of a former glacial lake with *Blysmus compressus* Flat-sedge by the Fangrist Burn (an outlier of the main colonies downstream) and *Carex dioica* Dioecious Sedge, *Dactylorhiza incarnata* Early Marsh-orchid, *Eleocharis quinqueflora* Few-flowered Spike-rush, *Euphrasia scottica* Eyebright, *Sagina nodosa* Knotted Pearlwort, and *Selaginella selaginoides* Lesser Clubmoss in the flushes where *Parnassia palustris* Grass-of-Parnassus is rather fine. The burns have *Berula erecta* Lesser Water-parsnip, *Ranunculus trichophyllus* Thread-leaved Water-crowfoot and *Veronica x lackschewitzii* Hybrid Water-speedwell. To the north of Bedshiel there is a colony of *Cirsium heterophyllum* Melancholy Thistle by the Kettleshiel Burn.

At the foot of Dirrington Great Law there are springs beside the burn at Dronshiel. Here *Apium inundatum* Lesser Marshwort still prospers at the spring-head with the charophyte *Chara globularis/virgata* aggregate but other species, including *Sedum villosum* Hairy Stonecrop, have been lost to drainage. The hill itself, of which only part is in the hectad, has an extensive colony of *Vaccinium vitis-idaea* Cowberry. Hardens Hill and Langton Edge have lost their moorland to forestry but *Lycopodium clavatum* Stag's-horn Clubmoss occurs by the tracks. Just to the north, an area of good moorland does survive. This is grazed by sheep and cattle and had a much more diverse flora than Greenlaw Moor but suffered an unfortunate fire in 2007. *Empetrum nigrum* Crowberry was particularly plentiful. Below the moor there are a series of deep cleughs through the Old Red Sandstone conglomerate. Here at Hells Cleugh, Cat Cleugh, Rams Cleugh and by the White Burn are a very fine series of flushes with abundant *Pinguicula vulgaris* Common Butterwort and frequent *Parnassia palustris* Grass-of-Parnassus. *Carex dioica* Dioecious Sedge and *Selaginella selaginoides* Lesser Clubmoss are quite well represented with *Euphrasia scottica* Eyebright and a very little *Eriophorum latifolium* Broad-leaved Cottongrass and *Narthecium ossifragum* Bog Asphodel. Similar habitat occurs by the Back Burn above The Hardens, but its extent and diversity are much more modest.

Hen Toe Bog is drained and planted with conifers but *Lycopodium clavatum* Stag's-horn Clubmoss and a single plant of *Diphasiastrum alpinum* Alpine Clubmoss have colonised the tracksides. Cockburn Law has but limited heather and no species of individual interest are known there. The former moorland east from Stoneshiel Hill along Bunkle Edge is all ploughed or planted.

Wetland habitats other than the moorland flushes and the riversides are few. Part of the *Trollius europaeus* Globeflower site at Crook Burn, Dyeshaugh, falls in the hectad and there is modest interest by the Howe Burn with *Berula erecta* Lesser Water-parsnip and *Solanum dulcamara* Bittersweet. The Hen Poo at Duns Castle is an artificial lake on a former wetland site where the main species of interest may all be introductions. These include *Acorus calamus* Sweet-flag, *Nuphar lutea* Yellow Water-lily, *Ranunculus lingua* Greater Spearwort, *Schoenoplectus lacustris* Common Club-rush, *Typha angustifolia* Lesser Bulrush and *T. latifolia* Bulrush. The pondweeds are inadequately surveyed, as the water's edge is treacherous with a floating mat of vegetation where *Menyanthes trifoliata* Bogbean and *Potentilla palustris* Marsh Cinquefoil flourish.

First and foremost among the **woodland** and riverside sites are Langtonlees Cleugh and the woodlands down the Langton Burn to Gavinton. At Langtonlees there has been much habitat loss over the years and the moorland, grassland and extensive flush system are all but destroyed with *Carex pallescens* Pale Sedge up the Wellcleugh Burn almost the only locally scarce species that may survive, though it could not be refound in 2008. The cleugh itself is still delightful but it is just a narrow strip in a deep gorge. The birch, oak, ash and elm are accompanied by *Populus tremula* Aspen and *Prunus padus* Bird Cherry and a wide range of herbaceous plants including *Cirsium heterophyllum* Melancholy Thistle, *Gymnocarpium dryopteris* Oak Fern, *Melica uniflora* Wood Melick and *Rubus saxatilis* Stone Bramble. However it is the commoner species like *Allium ursinum* Ramsons, *Anemone nemorosa* Wood Anemone, *Geranium sylvaticum* Wood Crane's-bill, *Mercurialis perennis* Dog's Mercury and *Primula vulgaris* Primrose present in a varied succession of micro-habitats that gives the cleugh its character. The woodlands lower down the burn are considerably modified but retain areas with a good ground flora. *Carex remota* Remote Sedge is occasional while *Campanula latifolia* Giant Bellflower, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Equisetum sylvaticum* Wood Horsetail and *Polystichum aculeatum* Hard Shield-fern are more frequent. *Doronicum pardalianches* Leopard's-bane is invasive downstream of the ruins of Langton House. The same type of woodland, though more modified, occurs below Gavinton.

Duns Castle and the Hen Poo 1992

Duns Castle has extensive woodland that has been managed in small blocks for many years and is much more varied than most plantations. The Oxendean Burn has carpets of *Allium ursinum* Ramsons though the *Ulmus glabra* Wych Elm once associated with it is much reduced. Elsewhere in the woods several colonies of *Pyrola minor* Common Wintergreen are found. It occurs most typically under beech, but one colony is just under a bench seat by a woodland walk and another on a series of steps along the walkway. *Geranium sylvaticum* Wood Crane's-bill is widespread but *Equisetum sylvaticum* Wood Horsetail is scarce while *Milium effusum* Wood Millet and *Poa chaixii* Broad-leaved Meadow-grass are naturalised introductions. The *Carex sylvatica* Wood Sedge found with these two grasses and elsewhere could be native or introduced or both.

There are a series of woodland fragments by the Whiteadder Water. At Hoardweel there is extensive juniper scrub but the former moorland-edge setting has been lost so, although the bushes themselves are impressive, the habitat as a whole is not. There are grasslands of interest along the Whiteadder nearby, especially on the rocks at the Devil's Dungeon. Good woodland occurs near the river between Cockburn and Cockburn Mill Ford. A small dean at Cockburn has abundant *Hyacinthoides non-scripta* Bluebell while the riverside has *Campanula latifolia* Giant Bellflower, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Geranium sylvaticum* Wood Crane's-bill, *Prunus padus* Bird Cherry, *Saxifraga granulata* Meadow Saxifrage, *Solidago virgaurea* Goldenrod and *Stellaria nemorum* Wood Stitchwort. The slopes of Stoneshiel Hill are bracken dominated with woodland remnants and present a woodland restoration opportunity. Similar fragments are found at Almaheart and near Preston Bridge. At Cumledge the soils change to the Carboniferous and *Elymus caninus* Bearded Couch is remarkably plentiful but otherwise the flora is similar. The *Malva moschata* Musk Mallow on the river gravels at Cumledge is probably an introduction. *Doronicum pardalianches* Leopard's-bane is invasive along all the banks of the Whiteadder that fall in the hectad often with *Claytonia sibirica* Pink Purslane and *Symphytum tuberosum* Tuberous Comfrey. *Myrrhis odorata* Sweet Cicely is quite frequent in woodland and riverside habitats.

Only a short stretch of the Blackadder at Nisbet Hill falls in the hectad. Here the **aquatic** hybrid *Ranunculus circinatus x fluitans* Greenlaw Water-crowfoot occurs with *Berula erecta* Lesser Water-parsnip and the naturalised *Butomus umbellatus* Flowering-rush.

Grassland habitats away from the moorland edges are just fragments by the riverside and road verges. *Helianthemum nummularium* Common Rockrose is occasional on knowes by the Whiteadder while *Knautia arvensis* Field Scabious is known only on a road verge near Peelrig. There is a colony of *Viola lutea* Mountain Pansy at the hill fort at Raecleugh Hill Head, all with the yellow flowers usual in Berwickshire.

Given the variety of soils, **arable weeds** are weakly represented. *Galeopsis speciosa* Large-flowered Hemp-nettle and *Lamium amplexicaule* Henbit Dead-nettle are scarce while *L. confertum* Northern Dead-nettle is more widespread.

Ruderal habitats around the town of Duns support *Aethusa cynapium* Fool's Parsley and *Fumaria officinalis subsp. wirtgenii* Common Fumitory. Gavinton boasts *Montia fontana subsp. chondrosperma* Blinks on the path to the church and *Veronica agrestis* Green Field-speedwell and *V. polita* Grey Field-speedwell in gardens. Of the neophytes *Allium paradoxum* Few-flowered Garlic is now widespread around Duns and by the Whiteadder below Preston, *Pseudofumaria lutea* Yellow Corydalis is long-established on walls at Duns and has recently been joined there by *Buddleja davidii* Butterfly-bush. *Reseda luteola* Weld is plentiful in Harelaw Craigs quarry.

Recent **game crops** have included *Melilotus alba* White Melilot and *M. officinalis* Ribbed Melilot near Grueldykes.

The **roadsides** have the usual halophytes, *Atriplex prostrata* Spear-leaved Orache, *Puccinellia distans* Reflexed Saltmarsh-grass and *Spergularia marina* Lesser Sea-spurrey, and also *Juncus ambiguus* Frog Rush with *Sagina maritima* Sea Pearlwort along the B6456 near Bedshiel.

NT76 Abbey St Bathans

(Systematic sample surveys 1995, 2010)

Overview

79% of the hectad NT76 is in Berwickshire. It lies between 45m at the burn below Pease Bridge and 365m on the slopes of Heart Law.

Most of the hectad lies above 150m on acid Silurian rocks but these meet deposits of the Upper Old Red Sandstone at the Heriot Water and Tower Dean in the north and marginally near Ellemford Bridge. There is a small area of sand from post-glacial deposits between Stockbridge and Cockburnspath.

This is not a species-rich hectad and the botanical interest has been depleted by the loss of almost all the moorland to improved grassland and conifer forestry, some of it but recently. However enough remains of the oakwoods around Abbey St Bathans to leave an attractive entity that offers excellent displays of woodland flowers in the spring. Even better oakwoods were formerly present at Penmanshiel, but most of this wood is now planted with conifers. However the lower part is dean woodland of quite high botanical interest.

The small settlement at Abbey St Bathans boasts a church. There is very little arable ground.

Sites with at least moderately good habitat	GR – NT
Blackford Rig, Philip Burn	7063, 7163
Little Dod, Eye Water below	7366
Hoprigshiels Wood	7468
Frampath Burn	7461
Ellerburn Wood	7660, 7661
Crooked Bank, Laughing Law	7264, 7363, 7364
Brush Wood, Godscroft Wood	7363, 7463
Bankend Wood	7462, 7562
Shannabank Wood	7562, 7661, 7662
Butterwell Wood	7661, 7761
Retreat Wood	7760
Wild Wood	7760
Elba Wood	7860
Aikyside Wood	7860, 7960, 7961
Ecclaw Hill	7567
Edmond’s Dean, Bowshiel Dean	7667, 7767, 7768, 7866, 7867, 7967
Pease Dean, upper section, Penmanshiel Wood (part NT86)	7966, 7967, 7968, 7969, 8068
Tower Dean, upper section	7769, 7869

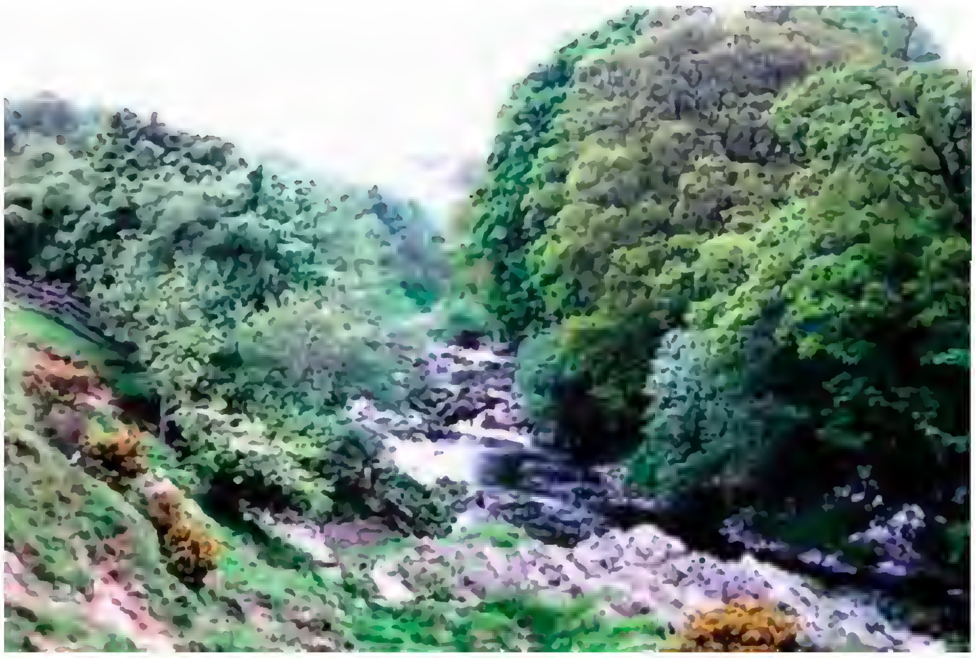
Habitats

The **woodlands** are the main botanical feature. Following the Whiteadder down from Ellemford Bridge there is only fragmentary interest in Roughside Wood, Greenhope Wood and Scrogie Wood but the Frampath Burn is an attractive cleugh, albeit no longer set in moorland, with *Gymnocarpium dryopteris* Oak Fern. The screes at Mountjoy Wood have, rather surprisingly, lost *Cryptogramma crispa* Parsley Fern but there is much *Ceratocapnos clavicaulata* Climbing Corydalis which is something of a feature of the area.

Just above Abbey St Bathans the Monynut Water joins the Whiteadder Water. While the source of the Monynut Water is in East Lothian, it flows into the vice-county of Berwickshire at Nether Monynut below which there are a series of good oakwoods on the east bank. The oaks themselves have not been exhaustively studied but it appears that not all the native oaks are *Quercus petraea* Sessile Oak as there are signs of introgression with *Quercus robur* Pedunculate Oak. The latter is also present, but probably mainly as plantings. Crooked Bank and Laughing Law are largely scrub and grassland with some good colonies of *Helianthemum nummularium* Common Rockrose. Brush Wood is somewhere between an oakwood and wood pasture and here primroses *Primula vulgaris* and anemones *Anemone nemoralis* are particularly impressive with *Geranium sylvaticum* Wood Crane's-bill and *Prunus padus* Bird Cherry by the burn. The woodland cover is more complete at Godscroft Wood and Bankend Wood where *Solidago virgaurea* Goldenrod becomes a feature on rocks near the burn. *Prunus padus* Bird Cherry remains prominent along the waterside for some kilometres by the Monynut and Whiteadder Waters.

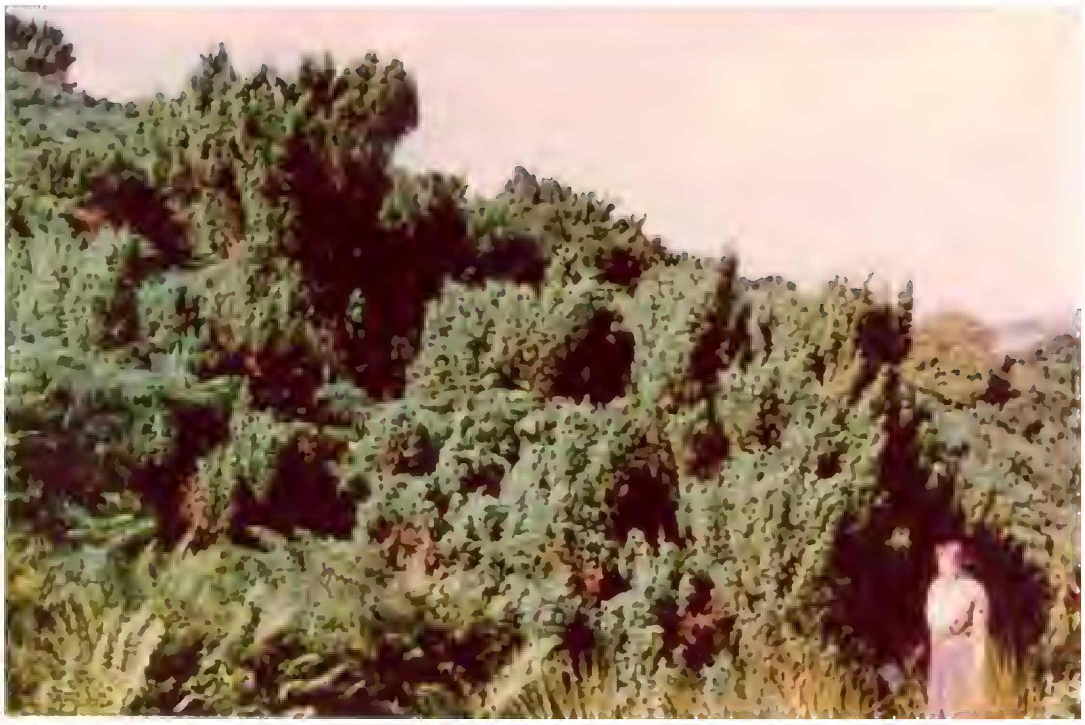
Brush Wood and Monynut Water 2010

Below the junction of the two waters, Shannabank Wood has good habitat, especially along the White Burn as the section opposite Abbey St Bathans House is compromised by amenity plantings though *Adoxa moschatellina* Moschatel and *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage are evidence of less acid conditions. *Meconopsis cambrica* Welsh Poppy and *Sambucus racemosa* Red-berried Elderhave naturalised quite widely. Butterwell Wood has the only colony of *Lathraea squamaria* Toothwort ever recorded anywhere on the Whiteadder, which is strange, as apparently suitable habitat is widespread. *Ranunculus auricomus* Goldilocks Buttercup is also present, but in small quantity. This species is surprisingly scarce in Berwickshire as a whole. Below Retreat House there is a bend in the river with fine habitat on both banks and on islets in the river. Retreat Wood still has a fair colony of *Melampyrum pratense* Common Cow-wheat which has quite recently disappeared from all the other woods in the series, apparently as a result of eutrophication, with grasses becoming more dominant. The islets support the only colony of *Salix myrsinifolia* Dark-leaved Willow in Berwickshire (one bush may survive near Grantshouse). *Populus tremula* Aspen grows nearby. Across the river, Wild Wood is much wetter and quite a wide riverside strip is dominated by alder. Here *Cardamine amara* Large Bitter-cress, *Carex laevigata* Smooth-stalked Sedge and *C. remota* Remote Sedge are found with *Phegopteris connectilis* Beech Fern and *Viburnum opulus* Guelder-rose on the bank above. *Hyacinthoides non-scripta* Bluebell is locally dominant but the *Symphytum tuberosum* Tuberous Comfrey at the waterside is considered to be a naturalised introduction along with *Claytonia sibirica*



Wild Wood and Whiteadder Water 1998

Pink Purslane and some more intrusive neophytes. Below this, an attractive stretch of rocky riverside leads to Elba, where Strait Leap is the name given to a gorge at the bend in the river. *Populus tremula* Aspen grows on the rocks with a good colony of *Ranunculus auricomus* Goldilocks Buttercup above in which the flowers are mostly perfect, rather than with the reduced number of petals so often seen. There are a few native junipers in the oaks above and more have recently been planted.



Massive junipers at Aikyside Wood Franklyn Perring 1960

At some distance from the Whiteadder lies Aikyside Wood, a uniformly acid oakwood. There is flushed grassland alongside with a large colony of *Carex laevigata* Smooth-stalked Sedge and traces of the moorland now lost from the slopes adjacent. However a colony of over three hundred large junipers survives. A photograph taken in 1960 shows these to have been truly magnificent, but they are now ageing and the habitat has deteriorated sadly with the spread of bracken and brambles. Pigs were recently turned out in the wood in an attempt to promote regeneration. This did not happen. Instead rank vegetation invaded, especially amongst the junipers. Although planted with conifers, large colonies of *Gymnocarpium dryopteris* Oak Fern and *Phegopteris connectilis* Beech Fern survive at Ellerburn Wood on steep, wet, north-facing slopes.

There was formerly good woodland habitat in the upper part of the Pease Burn watershed at Blackburnrig, Edmond's and Bowshiel Deans. Very little undisturbed habitat remains there. *Gymnocarpium dryopteris* Oak Fern just survives in Blackburnrig Dean and in one of the side cleughs at Bowshiel Dean where it grows with *Melica uniflora* Wood Melick. Although Bowshiel Dean does have some small stands of old oaks and a few heathery banks, the wet burnsides are arguably as interesting with *Callitriche hamulata* Intermediate Water-starwort, *Senecio aquaticus* Marsh Ragwort and *Veronica scutellata* Marsh Speedwell. The charophyte *Nitella flexilis/opaca* aggregate is found in a pond.

Ancient oaks at Edmond's Dean 2010

Penmanshiel Wood was one of the Berwickshire sites most visited by nineteenth century botanists but much the greater part of the oakwood and all the adjacent moorland have been lost. The side cleughs have a little remant oakwood and here *Milium effusum* Wood Millet was recorded in 1989. *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage is frequent near the burn with *Ceratocapnos clavicaulata* Climbing Corydalis above. The banks of the railway cutting have a large colony of *Ulex gallii* Western Gorse but this is associated with *Cytisus multiflorus* White Broom, so the *Ulex* may also be an introduction especially as it was not found by the nineteenth century botanists, despite it being known to them elsewhere. Only the upper part of Pease Dean is in the hectad. It is contiguous with Penmanshiel Wood but is marked by the point where the burn drops abruptly into a gorge. The gorge is mixed woodland of oak, ash and elm and is notable for a large colony of *Polystichum setiferum* Soft Shield-fern which is thought to have extended recently away from the most sheltered recesses. Similarly, only the upper part of Tower Dean is in the hectad. This is much the most natural part with good oakwood and is again notable for *Polystichum setiferum* Soft Shield-fern. *P. aculeatum* Hard Shield-fern is surprisingly scarce. The upper part of the Tower Burn is known as the Heriot Water. Its banks have a good deal of alder and occasional flushes with remnants of a moorland flora including such species as *Carex pulicaris* Flea Sedge and *C. viridula subsp. brachyrrhyncha* Long-stalked Yellow-sedge. Hoprigshiels Wood is a more notable stand of alder with a characteristic ground flora including *Ajuga reptans* Bugle, *Cardamine amara* Large Bitter-cress, *Iris pseudacorus* Yellow Iris and *Lysimachia nemorum* Yellow Pimpernel.

***Campanula latifolia* Tower Dean**

The conifer plantations at Catch Hill, Dunter Law and Dunglass Common occupy **former moorland** and are now most notable for the clubmosses *Diphasiastrum alpinum* Alpine Clubmoss and *Lycopodium clavatum* Stag's-horn Clubmoss together with *Euphrasia micrantha* Eyebright, all three being found on stony tracksides. Small moorland fragments survive nearby. An unexpected survival is *Genista anglica* Petty Whin at Ecclaw Hill in a small area of heather with acidic flush communities. At Blackford Rig there are **base-rich flushes** with *Eleocharis quinqueflora* Few-flowered Spike-rush, *Euphrasia scottica* Eyebright, *Pedicularis palustris* Marsh Lousewort and *Pinguicula vulgaris* Common Butterwort in a partly drained field and another flushed burnside above the Dye Water below Little Dod has similar species over a wider area joined by *Dactylorhiza incarnata subsp. incarnata* Early Marsh-orchid, *Selaginella selaginoides* Lesser Clubmoss and *Narthecium ossifragum* Bog Asphodel. A comparable small area of wetland survives by Hen Toe Bridge with *Parnassia palustris* Grass-of-Parnassus and *Pedicularis palustris* Marsh Lousewort, though the *Parnassia* was not refound in 2010.

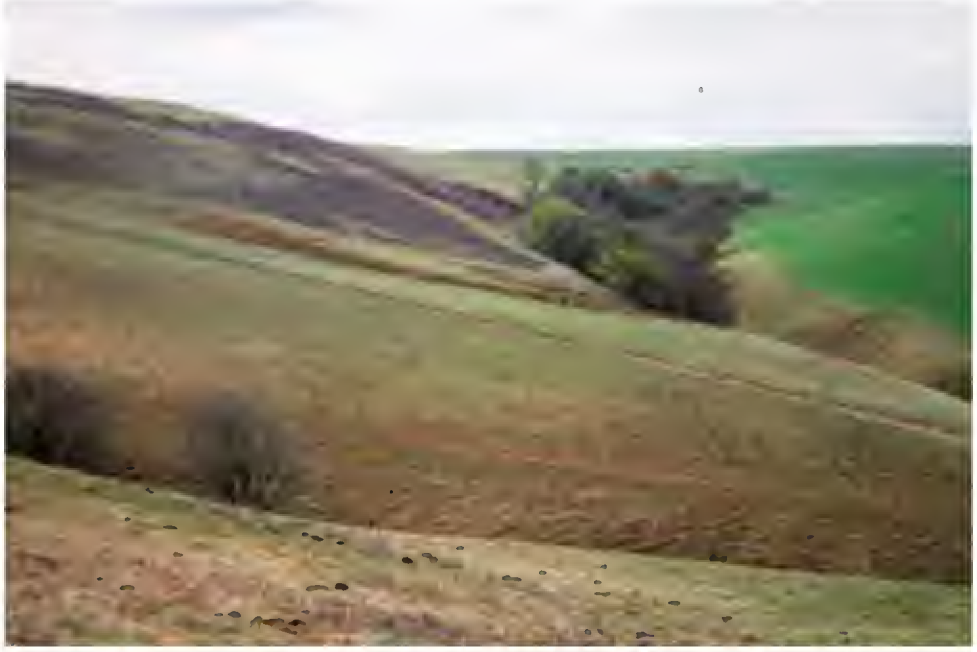
Apart from these flushes there is little **wetland**. Bits and pieces of wetland near the Eye Water at Quixwood Moor still yield *Menyanthes trifoliata* Bogbean with *Oreopteris limbosperma* Lemon-scented Fern on the banks nearby.

Upper Monynut with windfarm in East Lothian 2010

There is next to no natural **grassland** away from the burnsides with any degree of species-richness. At Edin's Hall above the Wild Wood *Carex caryophyllea* Spring Sedge and *Stellaria pallida* Lesser Chickweed are present in grassland near the remains of the broch. At Glen Fin there are sandy knowes with tiny populations of *Erodium cicutarium* Common Stork's-bill and *Spergularia rubra* Sand Spurrey.

There are a few **arable** fields on sandy ground between Tower Bridge and Stockbridge. Here *Anagallis arvensis* Scarlet Pimpernel, *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle *and L. hybridum* Cut-leaved Dead-nettle occur with *Amsinckia micrantha* Common Fiddleneck as a recent arrival.

A wildflower mix has been sown recently where the Cockburnspath bypass on the A1 passes through a rock cutting. Only part of the cutting is in the hectad. Here *Galium mollugo* Hedge Bedstraw and *Stachys officinalis* Betony have naturalised well. The usual roadside halophytes occur on the A1 and *Atriplex littoralis* Grass-leaved Orache has colonised the A6112 near Drakemire.



Frampath Burn still with heather on Abbey Hill 1991

NT77 Cockburnspath

(Systematic sample surveys 1990, 2009)

Overview

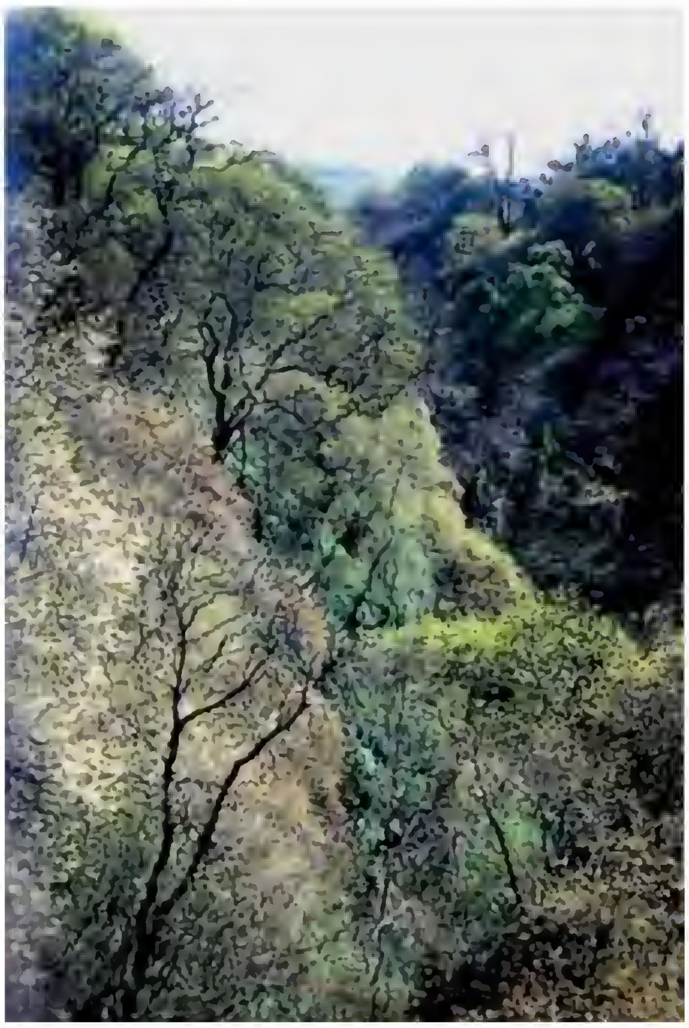
Only 8% of the coastal hectad NT77 is land that falls in Berwickshire. It lies between sea level and 140m near Hoprig. This is an interesting area with a distinct geology. It lies on the Upper Old Red Sandstone and Carboniferous Sandstones, partly overlaid by fluvio-glacial sand and gravel. The farmland is cut by dramatic deans and the coast is varied with sandy bays, shingle, cliffs and sea braes. Pease Bay has a caravan development and Cove a small picturesque harbour. Cockburnspath itself is a village of character close to the A1 trunk road and the mainline railway. Sand and gravel are extracted nearby.

Sites with at least moderately good habitat	GR - NT
Dunglass Dean (VC 81 part, also VC 82)	7570, 7571, 7671, 7772
Ramsheugh Bay, Reed Point	7772
Cove, Cove Harbour	7871
Pease Dean, lower section, Tower Dean, lower section	7870, 7970
Pease Bay, Ewelairs	7871, 7970

Habitats

***Fuchsia magellanica* Dunglass Dean**

At Dunglass Dean, of which only the south side is in Berwickshire, the hill burn drops into a modest dean that deepens swiftly to a dramatic sandstone gorge. The **dean woodland** is much modified by plantings except in the gorge which is remarkable for a profusion of ferns. However there is little species diversity: while there is abundant *Phyllitis scolopendrium* Hart's-tongue Fern, *Polystichum aculeatum* Hard Shield-fern and *P. setiferum* Soft Shield-fern are notably rare. This has historically been one of just two significant stations for *Carex pendula* Pendulous Sedge, though this species is now establishing in a few other places from introductions. Well-naturalised *Fuchsia magellanica* is an unexpected feature of the dean. Pease and Tower Deans are two further dean woodlands that join near their foot. Only part of the deans falls in the hectad. Despite the intrusion of a road crossing, Pease Dean has the more natural woodland of oak, ash and elm. Tower Dean has suffered partial conversion to conifers but is now being restored by the Scottish Wildlife Trust and here *Polystichum setiferum* Soft Shield-fern now has much its best station in Berwickshire, as what was always a good colony has spread dramatically out of the confines of the gorge onto the wooded banks, possibly assisted by climate change. *P. aculeatum* Hard Shield-fern is also well-represented and the hybrid occurs. The woodland ground flora is quite varied in both deans. *Adoxa moschatellina* Moschatel, *Cardamine amara* Large Bitter-cress, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage and *Veronica montana* Wood Speedwell are well represented. *Campanula latifolia* Giant Bellflower and *Equisetum telmateia* Great Horsetail are present. *Allium paradoxum* Few-flowered Garlic in Pease Dean and *Impatiens glandulifera* Indian Balsam in Tower Dean are recent intrusive incomers.



Pease Dean above bridge 1989

The **sea braes** are now all un-grazed and there is much rank grassland. The modest areas of shorter turf are associated with cliff-edges and their area seems to have been reduced by eutrophication from the fields above. They remain attractive with *Armeria maritima* Thrift, *Leontodon hispidus* Rough Hawkbit, *Ononis repens* Common Restharrow and *Plantago maritima* Sea Plantain. *Astragalus danicus* Purple Milk-vetch was not refound in 2009, but there is a little *Centaurium erythraea* Common Centaury near Cove. Coastal heath is represented only by patches of *Calluna* Heather at Hawk's Heugh. There are some flushes with *Dactylorhiza purpurella* Northern Marsh-orchid, *Carex flacca* Glaucous Sedge and *Succisa pratensis* Devil's-bit Scabious with a very little *Carex pulicaris* Flea Sedge, others are carpeted by tall herbs with large patches of *Eupatorium cannabinum* Hemp-agrimony. *Populus tremula* Aspen occurs on cliffs by Cove Harbour and

Cove Harbour from ungrazed braes 2009

Asplenium marinum Sea Spleenwort a little to the south. The braes continue inland at the foot of Tower Dean and here, beyond the caravans, the sandy grassland was grazed until relatively recently and supported modest populations of *Erodium cicutarium* Common Stork's-bill, *Filago minima* Small Cudweed, *F. vulgaris* Common Cudweed, *Myosotis ramosissima* Early Forget-me-not and *Sherardia arvensis* Field Madder. These populations have now been lost to coarse grasses and whins except at the very edge of the escarpment.

The **seashore** is interesting with a diversity of communities, albeit often in small quantity. The sand at Pease Bay has recently been re-colonised by *Cakile maritima* Sea Rocket in some quantity and there are modest dunes with *Ammophila arenaria* Marram, *Leymus arenarius* Lyme-grass and *Elytrigia juncea* Sand Couch. One plant of *Beta maritima subsp. maritima* Sea Beet was seen in shingle at the back of the north part of the bay in 2009 and *Salsola kali* Prickly Saltwort has occurred as a casual in the past. The two bays at Ramsheugh have more shingle than sand and there are fragments of saltmarsh among the rocks. *Glaucium flavum* Yellow Horned-poppy is plentiful on the shingle, except where *Centranthus ruber* Red Valerian has colonised, and the saltmarsh has *Blysmus rufus* Saltmarsh Flat-sedge, *Carex extensa* Long-bracted Sedge and *Spergularia media* Greater Sea-spurrey. One plant of *Aster tripolium* Sea Aster has recently established and *Suaeda maritima* Annual Sea-blite and *Parapholis strigosa* Hard-grass have both occurred transitorily in the past. *Seriphidium maritimum* Sea Wormwood likewise appears to be somewhat transitory, being currently known only at a headland south of Cove Harbour. *Vicia lathyroides* Spring Vetch is not prospering with only single plants being recently seen or suspected in sand at Ramsheugh and Cove Harbour. *Valerianella locusta* Common Cornsalad fares little better in the same habitat.

Beta maritima **Sea Beet Pease Bay 2009**

The fields are sandy enough to support a diverse **arable weed** flora, but there is little suitable cropping and the scarcer species are mostly encountered around Cockburnspath itself or on the sand and gravel workings. Species present include *Chrysanthemum segetum* Corn Marigold, *Fumaria capreolata* White Ramping-fumitory, *F. densiflora* Dense-flowered Fumitory and *F. purpurea* Purple Ramping-fumitory. Sandy banks at Cockburnspath also support a **neutral grassland** flora with *Chenopodium bonus-henricus* Good-King-Henry, *Geranium pusillum* Small-flowered Crane's-bill, *Malva neglecta* Dwarf Mallow and *Silene vulgaris* Bladder Campion. *Agrimonia eupatoria* Agrimony occurs in just

***Glaucium flavum* Ramsheugh Bay 2009**

a few places at field boundaries while *Vicia sativa subsp. segetalis* Common Vetch is more widespread and perhaps an introduction.

The A1 trunk road now bypasses Cockburnspath through a rock cutting. Here the **roadside** banks have been sown with a wildflower mix and species established include *Campanula trachelium* Nettle-leaved Bellflower, *Cytisus striatus* Hairy-fruited Broom, *Galium mollugo* Hedge Bedstraw and *Stachys officinalis* Betony.

NT83 Coldstream

((Systematic sample surveys 1997, 2010)

Overview

Only 5% of the hectad NT83 is in Berwickshire. It lies between 8m on the Tweed at Coldstream and 52m at Homebank. The geology is calciferous sandstones of the Carboniferous overlain with glacial drift. This is good agricultural land, indeed Lees Haugh is the best in the county.

The river Tweed is the dominant feature and there are some fragments of natural grassland by the riverside. The aquatic flora of the river has survived to a remarkable extent. The Leet Water is also a feature.

The Hirsel Estate has woodlands that relate back to earlier more natural habitat as well as grassland and wetland. Coldstream Golf Course lies on this estate by the Leet Water.

The town of Coldstream is prominent.

Sites with at least moderately good habitat	**GR - NT**
Carham, Tweed opposite (see NT73)	8038, 8039
Fireburnmill, Tweed near	8139, 8238, 8239, 8338, 8339

Habitats

The **Leet Water** is a **wildlife corridor** across the heart of the agricultural land of the Merse with grassland, wetland and fragmentary woodland. This corridor continues through to its junction with the Tweed. Below The Hirsel *Rumex conglomeratus* Clustered Dock occurs at the river margin near *Schoenoplectus lacustris* Common Club-rush, while a haugh area supports *Festuca pratensis* Meadow Fescue and *X Festulolium loliaceum* Hybrid Fescue with a little *Agrimonia eupatoria* Agrimony. The woodland has *Brachypodium sylvaticum* False-brome and *Hypericum hirsutum* Hairy St John's-wort and a little *Mycelis muralis* Wall Lettuce. While this is a natural habitat for the *Mycelis*, the plants are probably just outliers of the large populations on walls in Coldstream and at The Hirsel and it is perhaps best considered as an introduction, as elsewhere in Berwickshire.

***Lactuca virosa* Coldstream 1987**

Away from the Leet Water **species-rich grassland** is almost confined to the banks of the Tweed. *Rosa rubiginosa* Sweet-briar occurs at a species-rich road verge by the A697 at Fireburnmill and by the Leet Water. It may well be native. Below Fireburnmill there is a river wall built of limestone which had *Galium boreale* Northern Bedstraw in 1997. The top of the wall has since been colonised by dense scrub. A small part was reached from the river in 2013. The riverside here boasts *Ononis repens* Common Restharrow and *Origanum vulgare* Wild Marjoram but *Plantago media* Hoary Plantain was last recorded in 1960, though there is an intriguing record of this species from 1987 at the southwest corner of Dundock Wood. *Knautia arvensis* Field Scabious is occasional on the riverside banks while *Silene vulgaris* Bladder Campion is found by the A697. At the Lees there is another interesting riverside retaining wall. Here it is not so much the wall itself but a steep bank immediately above it that is species-rich. The *Cerastium arvense* Field Mouse-ear, *Myosotis ramosissima* Early Forget-me-not, *Trifolium striatum* Knotted Clover and *Valerianella locusta* Common Cornsalad that occur here are probably relicts of former sandy grassland. *Galium mollugo* Hedge Bedstraw is still found by the drive to The Hirsel, but recent grassland management has severely reduced it.

Amongst the introductions at the **riverside** *Heracleum mantegazzianum* Giant Hogweed has been extensively controlled but is far from eradicated. The colourful *Impatiens glandulifera* Indian Balsam is popular with the fishing community, which is a mercy as it appears uncontrollable, while *Scrophularia umbrosa* Green Figwort is long-naturalised. *Crambe hispanica* Oil-seed Crambe escaped in quantity when a crop at Lees Haugh flooded in 2005 and flowered plentifully where silt was deposited but has barely persisted whereas *Poa palustris* Swamp Meadow-grass appears to have persisted unnoticed there for a century or more at muddy river margins, but in very small quantity. *Myosoton aquaticum* Water Chickweed and a hybrid Yellow-cress *Rorippa x anceps* appear to be recent arrivals at Lees Haugh.

The River Tweed **aquatic species** are well represented in the hectad: *Potamogeton lucens* Shining Pondweed, *P. x salicifolius* Willow-leaved Pondweed, *P. pectinatus* Fennel Pondweed and *P. perfoliatus* Perfoliate Pondweed form the core of the pondweed community that is well developed where the river runs over rock shelves by Fireburnmill but less so in the more sluggish section at Lees Haugh. *Potamogeton pusillus* was recorded in several monads in 1971 but has not been seen in the hectad since then. With

Ranunculus pencillatus Stream Water-crowfoot the taxon traditionally recognised as *R. fluitans* River Water-crowfoot is occasional, but it is probably a hybrid clone rather than the species in view of its low fertility. *Ranunculus x kelchoensis* Kelso Water-crowfoot has recently been found at Fireburnmill.

The **arable fields** are too well farmed to have much of a weed flora. *Fumaria densiflora* Dense-flowered Fumitory was noted near the Lithtillum Burn in 1979 but not since. However *Polygonum rurivagum* Cornfield Knotgrass appeared near Fireburnmill in 1992 and has persisted. *Borago officinalis* Borage was grown as a crop at Lees Haugh and has it has persisted there as a weed.

The **ruderal habitats** at Coldstream are interesting mainly because of the extensive network of tall stone walls and the curious walkway above the Tweed where there is a retaining wall topped by somewhat unstable sun-baked sandy banks. *Mycelis muralis* is plentiful on walls while *Lactuca virosa* Great Lettuce is a long-established feature of the banks with *Calendula officinalis* Pot Marigold and *Oenothera glazioviana* Large-flowered Evening-primrose, more recent arrivals that are now fairly well naturalised. At the foot of the walls nearest the river *Malva neglecta* Dwarf Mallow is found with *Valerianella locusta* Common Cornsalad and *Veronica polita* Grey Field-speedwell. The latter is also occasional in paved areas about the town. *Centranthus ruber* Red Valerian is plentiful while *Buddleja davidii* Butterfly-bush and several *Cotoneaster* species are more recent colonists.

***Oenothera glazioviana* Coldstream 2010**

NT84 Swinton

(Systematic sample surveys 1993, 2009)

Overview

81% of the hectad NT84 is in Berwickshire. It lies between 3m on the Tweed at Blount Bank and 95m at Hirsel Law. The geology is calciferous sandstones of the Carboniferous overlain with glacial drift. This is the heart of The Merse with much good agricultural land. It was not always so. When the botanists came to record the flora in the 1830's it was but a generation since drainage had destroyed much of the remaining wetland that lay in hollows between 'rigs' of drier ground in a corrugated landscape shaped by the ice sheets of the last ice age. Almost the full range of plant species formerly present was still there to be found in the 1830's, albeit often in fragmented habitats, but many species have gradually succumbed to further drainage and eutrophication so that it is now difficult to visualise the former habitats on the ground.

Part of The Merse is drained by the Leet Water, which cuts across the general lie of the land and meanders for several kilometres across haughs between grassy banks. There its flora has fared better, though the aquatic flora has largely been lost to eutrophication. On a larger scale the river Tweed also cuts across the lie of the land and there is some natural grassland both by the riverside itself and where there are steep banks. These banks were once wooded, and some are again today, but almost all natural woodland in the area was lost in centuries of Border conflict. However the aquatic flora of the Tweed has survived to a remarkable extent.

Nevertheless there are some great landed estates where a range of habitats survive. The Hirsel Estate, to which public access is provided on a particularly generous scale, has extensive woodlands that do relate back to earlier more natural habitat as well as grassland and wetland. Further habitat of interest occurs on the Ladykirk and Milne Graden estates, some of it accessible from the riverside walks.

Swinton is the principal village, while a small part of Coldstream extends into the hectad. Lennel and Ladykirk are smaller settlements.

Sites with at least moderately good habitat	**GR – NT**
Lithtillum Loch	8040, 8041
Birgham Wood (see NT73)	8040
Rough Haugh, Wylie Cleugh	8042, 8043, 8142
The Hirsel	8240, 8340
Hirsel Lake	8240
Hirsel Woods	8141, 8241, 8242
Tweedmill	8644, 8743, 8744
Milne Graden	8644, 8743, 8744
Ladykirk House, near	8844, 8845
Ladykirk, Blount Bank (also NT94)	8847, 8945, 8946, 8947

Habitats

Fossil tree Milne Gradan Dean 2009 (ask yourself how it got to this position)

Formerly there were modest areas of **lowland heath** at Birgham Muir and Skaithmuir along a ridge of sandy ground. The heath was sandy and supported southern species not known elsewhere in Berwickshire such as *Genista tinctoria* Dyer's Greenweed. Some of this heath is now woodland and heathland species survive in small quantity on the rides: *Centaurium erythraea* Common Centaury in Lithtillum Wood and a hybrid Cinquefoil *Potentilla x mixta* there and in Dunglass Wood, though *Calluna* Heather appears to have died out in the last 50 years.

The more extensive **woodlands** lie on the Hirsel estate and some are associated with **wetland habitats**. Lithtillum Loch is drained but there is a pond in the marsh that remains and here *Rumex maritimus* Golden Dock survives precariously on the muddy margins. The marsh is dominated by *Carex riparia* Greater Pond-sedge and willows while *Mentha arvensis* Corn Mint occurs on the woodland rides adjacent. Birgham Wood is described under hectad NT73 but there is a good colony of *Cirsium heterophyllum* Melancholy Thistle in a wet glade within willow carr, near the new pond that has unfortunately destroyed a second colony. The wooded policies at The Hirsel contain many old trees, in some places with a shrubby understory and open glades. These have allowed *Primula veris* Cowslip to prosper with a double-flowered variety of *Saxifraga granulata*

Meadow Saxifrage, doubtless naturalised from an introduction. *Mycelis muralis* Wall Lettuce is widespread and may be an accidental introduction that has spread. The woods at a distance from the house are managed in a way that preserves some more natural features. Notable relict species are *Pyrola minor* Common Wintergreen and *Gymnocarpium dryopteris* Oak Fern, but *Listera ovata* Common Twayblade has not been seen since 1985. Both *Betula pendula* Silver Birch and *B. pubescens* Downy Birch are frequent and this is perhaps the one area in Berwickshire where *B. pendula* might have a true native population. Elsewhere it is naturalised from plantings and now much planted, almost to the exclusion of *B. pubescens*. There is short elm dean by the Graden Burn in the private policies of Milne Graden with abundant *Allium ursinum* Ramsons. Here *Campanula latifolia* Giant Bellflower is presumably native but *Mycelis muralis* Wall Lettuce and *Milium effusum* Wood Millet are probably introductions.

The **Leet Water** is notable as a **wildlife corridor** across the heart of the agricultural land of The Merse with grassland, wetland and fragmentary woodlands. At The Hirsel *Senecio aquaticus* Marsh Ragwort, with the hybrid Ragwort *S. x ostenfeldii*, and *Rumex conglomeratus* Clustered Dock occur in the cattle-plodged river margins while the haugh fields support *Festuca pratensis* Meadow Fescue and *X Festulolium loliaceum* Hybrid Fescue with *Alchemilla* Lady's-mantle species. Throughout the corridor the banksides have much *Brachypodium sylvaticum* False-brome with frequent *Hypericum hirsutum* Hairy St John's-wort and a little *Agrimonia eupatoria* Agrimony. In Rough Haugh and Wylie Cleugh there are very extensive stands of *Carex riparia* Greater Pond-sedge with a little *C. acuta* Slender Tufted-sedge and *C. otrubae* False Fox-sedge. There are a few modest colonies of *Schoenoplectus lacustris* Common Club-rush in the Leet itself or at its banks. *Carex pendula* Pendulous Sedge is also present but may or may not be native

Abundant *Ranunculus bulbosus* on old ridge and furrow Ladykirk House 1993

Elsewhere in the hectad **species-rich grassland** is almost confined to the banks of the Tweed. However at Ladykirk there is a steep grass field, sadly now under-grazed, with *Centaurium erythraea* Common Centaury and *Myosotis ramosissima* Early Forget-me-not. The roadside verges are sometimes quite broad and some grassland species are preserved in them: *Agrimonia eupatoria* Agrimony in several places, *Knautia arvensis* Field Scabious more rarely, *Silaum silaus* Pepper-saxifrage only at Butterlaw and *Galium boreale* Northern Bedstraw remarkably near Hirsel Law crossroads. *Sedum telephium* Orpine also occurs near Hirsel Law but is probably naturalised from dumped material. *Galium mollugo* Hedge Bedstraw has several colonies at The Hirsel and again south of Swintonmill. *Cicerbita macrophylla* Common Blue-sow-thistle is now quite frequent by roadsides as is *Hyacinthoides x massartiana* Hybrid Bluebell. *Calystegia sepium* Hedge Bindweed is so plentiful on hedges that it is now difficult to appreciate that this was a novelty when first recorded in Berwickshire at Ladykirk in 1829, seemingly introduced with hedging plants. The parkland at Ladykirk House has old ridge and furrow visible and there *Ranunculus bulbosus* Bulbous Buttercup is plentiful on the ridges.

There are few **ponds**. Much the largest is Hirsel Lake. This has a modest aquatic flora where *Ceratophyllum demersum* Rigid Hornwort and *Potamogeton pusillus* Lesser Pondweed have now been joined by *Lemna minuta* Least Duckweed. At the margin there is much *Solanum dulcamara* Bittersweet and a little *Carex vesicaria* Bladder Sedge, while *Scutellaria galericulata* Skullcap was recorded in 1997 in a reed bed, now the only colony known in Berwickshire if indeed it is still present. A pond at

Morningbank which seems to be a remnant of a former oxbow of the Leet Water has a strong colony of *Schoenoplectus tabernaemontani* Grey Club-rush, the only Berwickshire station, while a pond at Little Swinton has a colony of *Veronica catenata* Pink Water-speedwell and also the hybrid Water-speedwell *V. x lackschewitzii.* A pit in Newton Quarry may still have the charophytes *Chara globularis/virgata* aggregate and *C. vulgaris*. Here the scrub adjacent has a colony of *Vicia tetrasperma* Smooth Tare as a presumed introduction. The quarry has recently been reopened after a period of disuse.

River Tweed at Ladykirk Bridge 1993

The **River Tweed** aquatic species are well represented in the hectad: *Potamogeton lucens* Shining Pondweed, *P. x salicifolius* Willow-leaved Pondweed, *P. pectinatus* Fennel Pondweed and *P. perfoliatus* Perfoliate Pondweed form the core of the pondweed community and are frequent while the status of *P. pusillus* and *P. x olivaceus* Graceful Pondweed is uncertain. *P. x bottnicus* Bothnian Pondweed is currently known only at the foot of the pool below Blount Bank. With *Ranunculus pencillatus* a taxon traditionally recognised as *R. fluitans* River Water-crowfoot is occasional, but it is probably a hybrid clone rather than the species in view of its low fertility. *Elodea nuttallii* Nuttall's Waterweed is a recent arrival. The banksides are varied with some sandstone rock exposures, dry grassland and woodland fragments. *Lactuca virosa* Great Lettuce is well represented at Coldstream and occurs again below Lennel, above Milne Graden and at Blount Bank. *Campanula latifolia* Giant Bellflower is occasional in woodland, as are *Carduus tenuifolius*, *Knautia arvensis* Field Scabious and *Origanum vulgare* Wild Marjoram on dry banks and *Carex acuta* Slender Tufted-sedge is frequent at the river's edge. Near Ladykirk House the sandstone rocks harbour an amazing colony of *Asplenium marinum* Sea Spleenwort at a considerable distance from the sea, though ivy has been encroaching and has had to be cut back. Here too is *Ballota nigra* Black Horehound. *Galium boreale* Northern Bedstraw survives on rocks by the river at Blount Bank with *Rubus caesius* Dewberry nearby. Amongst the introductions *Acorus calamus* Sweet-flag, *Allium vineale* Wild Onion, *Butomus umbellatus* Flowering-rush and *Silybum marianum* Milk Thistle are increasing modestly, *Lysimachia vulgaris* Yellow Loosestrife and *Scrophularia umbrosa* Green Figwort are long-naturalised while *Glyceria maxima* Reed Sweet-grass is increasing extravagantly. *Heracleum mantegazzianum* Giant Hogweed has been extensively controlled but is far from eradicated. *Crambe hispanica* Oil-seed Crambe escaped in quantity when a crop flooded in 2005 at Lees Haugh and flowered plentifully where silt was deposited but has barely persisted while *Poa palustris* Swamp Meadow-grass

Luke Gaskell, my wife & BSBI party opp. Norham 2007

appears to have persisted unnoticed for a century or more at muddy river margins, but in very small quantity. It is not known how long *Myosoton aquaticum* Water Chickweedhas been present at Milne Graden. A recent colonist above Tweedmill is *Cochlearia megalosperma* Tall Scurvygrass which has naturalised in quantity on a dripping rock face.

The **arable fields** have but a poor weed flora. *Aethusa cynapium* Fool's Parsley was noted near Butterlaw while *Anagallis arvensis* Scarlet Pimpernel, *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle, *L. hybridum* Cut-leaved Dead-nettle and *Persicaria lapathifolium* Pale persicaria are infrequent. *Mentha arvensis* Corn Mint is not recorded as an arable weed, being known solely on woodland rides. *Matricaria recutita* Scented Mayweed is increasing while *Alopecurus myosuroides* Black-grass is an unwelcome recent arrival. Game crops have brought some unexpected species, such as *Chenopodium quinoa* Quinoa and *Persicaria pensylvanica* Pinkweed which are deliberately grown for their abundant seeds.

The **ruderal habitats** at Swinton and Coldstream have modest interest. *Veronica polita* Grey Field-speedwell is occasional while *Buddleja davidii* Butterfly-bush and *Conyza canadensis* Canadian Fleabane are but recent arrivals.

NT85 Chirnside

(Systematic sample surveys 1998, 2012)

Overview

All of the hectad NT85 is in Berwickshire. It lies between 20m by the Whiteadder Water below Hutton Hall and 233m at Bunkle Edge.

Over half the hectad, the southern section, lies on the Carboniferous sandstones. This includes the course of the Blackadder and Whiteadder Waters, though there are deposits of alluvium on the haughs. From Chirnside northwards the slightly higher ground marks the upper Old Red Sandstone with a small section of the lower Old Red Sandstone to the north of the Billiemire Burn.

A great deal of the hectad is productive arable land with very little botanical interest. The banks of the Blackadder and Whiteadder Waters provide the principal habitats of interest. Below Allanton, where the two rivers join, there is the start of the deep secluded valley that continues downstream to the English Border. The haugh and woodland at Edington Mill was the best example of such habitats in the hectad, but its character has been much altered of late by a housing development on the site of the old mill. Bunkle Wood was a fine woodland and wetland site until the 1940's, though somewhat modified by nineteenth century plantings, but little remains. Edingtonhill Moor is similarly reduced with just a tiny fragment of old birchwood at Blackburn Fox Covert.

The mansion houses, or their ruins, sit at strategic points overlooking the Blackadder and Whiteadder except for Manderston whose extensive policies are set out on more open land.

The town of Chirnside is the main settlement, with villages at Edrom, Whitsome and Allanton.

The disused railway from Duns to Reston crosses the Whiteadder Water at Chirnsidebridge and then follows the Billie Burn which marks a pre-glacial course of the Whiteadder. There is a paper mill at Chirnside Bridge where the waste tip was at one time a productive hunting ground for adventive plants. At Causewaybank a sand and gravel pit was worked until recently but has now been landscaped for wildlife around a large pond.

Sites with at least moderately good habitat	GR - NT
Kimmerghame	8050, 8051, 8151, 8152, 8252
Bunkle Wood	8058, 8158
Edrom, Blanerne	8255, 8256, 8356
Kelloe, Blackadder Mount, Allanbank	8453, 8553, 8554
Ninewells	8555, 8655
Billie Castle	8559
Allanton Bridge, Whitehall, Bluestoneford	8654, 8754, 8755, 8855
Causewaybank Sandpit	8759, 8859
Lazybeds Plantation	8857, 8956, 8957
Edington Mill, Pear Bank	8855, 8954, 8955

Habitats

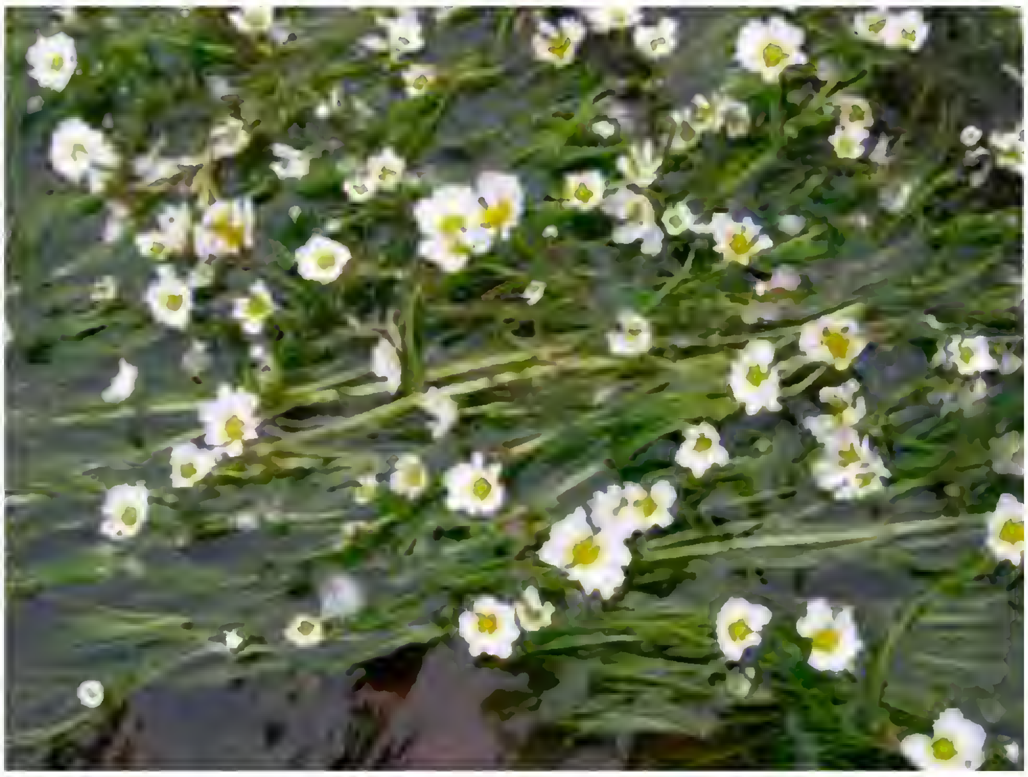
The **riverside** banks of the Whiteadder and Blackadder Waters have a variety of habitats. At Marden on the Whiteadder there is a little woodland interest by the foot of the Mack's Burn with *Campanula latifolia* Giant Bellflower while *Agrimonia eupatoria* Agrimony and *Knautia arvensis* Field Scabious occur in the grassland. Downstream at Blanerne there is an attractive haugh with *Berula erecta* Lesser Water-parsnip and *Stellaria nemorum* Wood Stitchwort while the woodland has a little *Hyacinthoides non-scripta* Bluebell as well as *Allium ursinum* Ramsons. The *Carex pendula* Pendulous Sedge may be self-sown from policies at Edrom. At Chirnsidebridge there is a complex of habitat fragments including wetland up the Billie Burn. *Leontodon hispidus* Rough Hawkbit, *Ononis repens* Common Restharrow and *Vicia sylvatica* Wood Vetch occur sparingly on the braes with *Alisma plantago-aquatica* Water-plantain, *Carex acutiformis* Lesser Pond-sedge and *Isolepis setacea* Bristle Club-rush in the wetland. The *Epilobium roseum* Pale Willowherb is more associated with the buldings than the riverside. Downstream the scaurs of the Blue Braes are topped in spring with a fine show of blossom from *Prunus avium* Wild Cherry and the Whiteadder there has a colony of *Ranunculus x kelchoensis* Kelso Water-crowfoot. There is a modest colony of *Rubus caesius* Dewberry at Hyndhaugh Braes while at Ninewells there is a wooded bank with *Geranium sylvaticum* Wood Crane's-bill, *Saxifraga granulata* Meadow Saxifrage and a wide variety of associates. Here also is *Daphne laureola* Spurge-laurel, a well-naturalised introduction frequent on steep banks by the Blackadder and Whiteadder as also at Steeple Heugh below Whitehall and in the wood between Bite-about Wood and Edington Mill.

General Swinton's wild boar, Kimmerghame 2007

Further south the Blackadder below Nisbet Bridge has an interesting aquatic flora with *Berula erecta* Lesser Water-parsnip, *Potamogeton x olivaceus* Graceful Pondweed, *Ranunculus circinatus x fluitans* Greenlaw Water-crowfoot, *Schoenoplectus lacustris* Common Club-rush and *Sparganium emersum* Unbranched Bur-reed. *Ranunculus circinatus* Fan-leaved Water-crowfoot was recorded here in 1973 but appears to have gone. Similar communities occur around Mouth Bridge and Kelloe Bridge with the addition of *Ranunculus x kelchoensis* Kelso Water-crowfoot. Both the *Ranunculus* hybrids tend to have double flowers but those of *R. x kelchoensis* Kelso Water-crowfoot are considerably the larger.

Kimmerghame has some unexpectedly fine banks of *Hyacinthoides non-scripta* Bluebell only recently faced with competition from *Allium paradoxum* Few-flowered Garlic. From Kelloe through to Allanton the river valley deepens and there is much more woodland with such species as *Adoxa moschatellina* Moschatel, *Cardamine amara* Large Bitter-cress, *Campanula latifolia* Giant Bellflower, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, *Festcua gigantea* Giant Fescue and *Veronica montana* Wood Speedwell. By the Blackadder below Blackadder Mount there is an area of alder wood crossed by a long-disused millstream. Here *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage is frequent. It is associated with a colony of *Carex pendula* Pendulous Sedge which may or may not be native. Around Blackadder Cottage there is a little *Galium mollugo* Hedge Bedstraw by the old drive to Blackadder House, *Listera ovata* Common Twayblade in the woodland and a large suckering patch of *Euonymus europaeus* Spindle which is probably an introduction.

There is an interesting group of introductions along the old drives to Blackadder House. Near the Allanton entrance there is much *Poa chaixii* with *Carex sylvatica* Wood Sedge (the latter being both native and an introduction in the area). The north drive down to Blackadder Cottage has *Luzula luzuloides* White Wood-rush and a large colony of *Brachypodium pinnatum* Heath False-brome (not the recently recognised *B. rupestre* Tor-grass).



***Ranunculus x kelchoensis* with fully-double flowers 2013**

The two rivers join at Allanton Bridge which is another station for *Potamogeton x olivaceus* Graceful Pondweed and *Ranunculus x kelchoensis* Kelso Water-crowfoot. The haugh below has recently lost its few seasonal pools to drainage but a small mire at the east end survives with *Carex paniculata* Greater Tussock-sedge and *Dactylorhiza purpurella* Northern Marsh-orchid. The *Salix pentandra* Bay Willow nearby could be native or planted. The grassy braes are now largely ungrazed and much of the interest has been lost to coarse grasses and scrub. However there are still many species of both dry and wet grassland on base-rich soils. Steeple Heugh below Whitehall is a wooded riverside crag with a grassland and woodland flora including *Galium odoratum* Woodruff, *Hypericum hirsutum* Hairy St John's-wort and *Saxifraga granulata* Meadow Saxifrage. There are further grassland and wetland fragments around and below Bluestoneford. At the foot of Bite-about Wood and on Pear Bank there is a little scrubby woodland of some modest interest where *Carex remota* Remote Sedge is found. Downstream, below Hutton Castle and above and below Edington Mill, there are woodland and scaurs with *Hieracium* Hawkweed microspecies. Below the mill is a haugh which was a rich grassland site until recently. However it is not now managed as such following a housing development at the old mill and its interest has declined though *Epilobium roseum* Pale Willowherb has prospered there with the disturbance. In particular *Galium mollugo* Hedge Bedstraw, which had its best Berwickshire colony here in 1984, is no longer evident. The old mill lade and pools and runs in the river associated with the cauld support an aquatic flora with *Potamogeton x olivaceus* Graceful Pondweed, *Ranunculus x kelchoensis* Kelso Water-crowfoot, *Sparganium emersum* Unbranched Bur-reed, *Veronica catenata* Pink Water-speedwell, *Zannichellia palustris* Horned Pondweed and the charophyte *Chara globularis/virgata* aggregate. *Scirpus sylvaticus* Wood Club-rush, frequent by the riversides along the Whiteadder, grows nearby. *Pinguicula vulgaris* Common Butterwort had an unlikely station in a flush on the slopes but may not now survive.

Grassland species include *Agrimonia eupatoria* Agrimony, *Hypericum hirsutum* Hairy St John's-wort, *Knautia arvensis* Field Scabious, *Ononis repens* Common Restharrow, *Origanum vulgare* Wild Marjoram and *Trifolium medium* Zigzag Clover. Woodland species include *Campanula latifolia* Giant Bellflower, *Polysticum aculeatum* Hard Shield-fern and *Vicia sylvatica* Wood Vetch. A long-established colony of *Artemisia absinthum* Wormwood survives precariously by the lane near the old mill. Swallow Heugh lies at the downstream end of this woodland. Here on the eroding slopes grow *Agrimonia eupatoria* Agrimony, *Clinopodium vulgare* Wild Basil and *Lathyrus sylvestris* Narrow-leaved Everlasting-pea.

The banks of the Whiteadder are much colonised by *Allium paradoxum* Few-flowered Garlic, *Doronicum pardalianches* Leopard's-bane and *Heracleum mantegazzianum* Giant Hogweed, though the latter is now controlled up to a point. The *Allium* is proving adept at colonising steep slopes. While the bulbils have been transported by vehicles in some places, much colonisation can be attributed to the hooves of roe deer as the plants often follow the line of their tracks. One of the species most at risk to the *Allium* is *Adoxa moschatellina* Moschatel, which is now very scarce in the riverside woods. *Impatiens glandulifera* Indian Balsam is now invading also. More acceptable introductions are *Claytonia sibirica* Pink Purslane, *Scrophularia umbrosa* Green Figwort, *Symphytum tuberosum* Tuberous Comfrey and, more locally, *Myrrhis odorata* Sweet Cicely. *Butomus umbellatus* Flowering-rush has colonised by the Blackadder and by the Whiteadder below the junction of the two rivers at Allanton.

Pond and herb-rich bank at Manderston 2012

Away from the rivers there are but a **miscellany** of habitat fragments. The **policies** at Manderston are a possible former station for the introduced *Alchemilla tytthantha* Russian Lady's-mantle which was found in 1959 in unnamed mansion policies near Duns. The policies only retain remnants of the former woodland and grassland flora in such species as *Geranium sylvaticum* Wood Crane's-bill and *Ranunculus bulbosus* Bulbous Buttercup though the pond has a large colony of the charophyte *Chara globularis/virgata* aggregate. *Veronica polita* Grey Field-speedwell occurs in the vegetable garden with *Montia fontana subsp. chondrosperma* Blinks on a gravel path. Bunkle Wood is now just a strip of **wet woodland** where the old birches now mingle with mixed plantings. Here *Dryopteris carthusiana* Narrow Buckler-fern and *Potentilla palustris* Marsh Cinquefoil give a hint of its former glories and *Salix pentandra* Bay Willow appears native in a flush on a bank with *Crepis paludosa* Marsh Hawk's-beard. *Lemna minuta* Least Duckweed has now colonised a pool in the wood. A little to the north, above Bunkle Castle, a good population of *Ophioglossum vulgatum* Adder's-tongue Fern flourishes on an unlikely **grassy bank**. Middlestots **pond** has *Isolepis setacea* Bristle Club-rush, *Rumex conglomeratus* Clustered Dock and *Veronica scutellata* Marsh Speedwell. Of the **woods away from the rivers**, Craigswall Wood was much visited by the Berwickshire Naturalists' Club in the nineteenth century in search of the *Polygonatum odoratum* Angular Solomon's-seal claimed from there. However a surviving herbarium specimen from 1878 demonstrates that the plant was in fact *P. multiflorum* Solomon's-seal and is considered to have been a naturalised introduction, as in several other places in Berwickshire. The wood is now a plantation with a few wet areas. The former interest of Old Pistol Plantation is also believed to be lost. Lazybeds Plantation, once known as Maines Wood, has a substantial area of mature alder wood with much *Caltha palustris*

Marsh Marigold, but no notable species have been found there. The old runways at Winfield **Airfield** has a large and most unexpected colony of *Echium vulgare* Viper's-bugloss associated with plentiful *Galium mollugo* Hedge Bedstraw, *Vulpia bromoides* Squirrel-tail Fescue and a little *Sherardia arvensis* Field Madder. Here also, as introductions, are *Malva moschata* Musk Mallow, *Vicia tetrasperma* Smooth Tare and *Vulpia myuros* Rat's-tail Fescue. Tiny remnants of Edingtonhill **Moor** can be traced in Blackburn Fox Covert with *Ceratocapnos claviculata* Climbing Corydalis and *Crepis paludosa* Marsh Hawk's-beard.

Ruins of Billie Castle 2012

The Billie Burn flows through the long-drained former **wetland** of Billie Mire, once the haunt of bittern, though tantalising traces remain in small wet areas cut off from the burn by the disused railway where *Carex paniculata* Greater Tussock-sedge and *C. riparia* Greater Pond-sedge are still found. Altogether more surprising was a small area of **base-rich grassland** in a railway cutting below Oldcastles. Here, with such modest associates as *Trisetum flavescens* Yellow Oat-grass and *Linum catharticum* Fairy Flax, a colony of the rare *Alchemilla glaucescens* Silky Lady's-mantle was found. This was thought to be an introduction with railway ballast until the more extensive colony at Hilton Bay was discovered, where it grows in a very species-rich calcareous grassland community. Sadly, this community has recently been largely lost to coarse grasses and scrub with just two plants of the *Alchemilla* and a little *Knautia arvensis* Field Scabious remaining. Nearby, a tributary of the Billie Burn runs past the ruins of Billie Castle in a shallow dean. Here there are some old trees, mainly alder, and grassy banks and flushes with *Alchemilla filicaulis subsp. vestita* Hairy Lady's-mantle, *Carex disticha* Brown Sedge, *C. flacca* Glaucous Sedge, *Conopodium majus* Pignut, *Dactylorhiza fuchsii* Common Spotted-orchid, *Leontodon hispidus* Rough Hawkbit, *Lychnis flos-cuculi* Ragged-Robin and *Stellaria holostea* Greater Stitchwort. These include some of the plants Dr George Henderson celebrates in the poems he wrote between about 1820 and 1860 so there is a nostalgic pleasure in enjoying them here in one of the spots he mentions.

Pond at Causewaybank 2012

Nearby at Causewaybank an exhausted **sand and gravel pit** has now been converted to wildlife habitats with a fair degree of success. *Littorella uniflora* Shoreweed has colonised the pond but it remains to be seen how long the grassland introductions survive. These include *Centaurea scabiosa* Greater Knapweed, *Clinopodium vulgare* Wild Basil, *Daucus carota subsp. carota* Wild Carrot, *Echium vulgare* Viper's-bugloss, *Malva moschata* Musk Mallow, *M. neglecta* Dwarf Mallow, *Plantago media* Hoary Plantain, a cultivar of *Primula* *veris* Cowslip and *Scabiosa columbaria* Small Scabious. *Listera ovata* Common Twayblade has colonised naturally.

Setaside Oldcastles 2003 Derek Robeson

The hectad is rich in **arable weeds**, though populations are mostly small and highly localised. *Centaurea cyanus* Cornflower has been recorded repeatedly over two centuries but its reappearance in 1998, seemingly from the seed bank, at Edrom Mains was a surprise. Amazingly, the small colony was discovered quite independently by two botanists within a few weeks of each other. However this pales into insignificance beside to the discovery of a field at Lintlaw where *Centaurea cyanus* Cornflower was recorded as plentiful in 1834 and 1893 and where it still appears year by year, sometimes in quantity. It is at least partly resistant to the herbicides Ratio SX and Duplosan applied mid-April. Another field between Edrom and Todheugh is remarkable in a different way. Here *Aethusa cynapium* Fool's Parsley was seen in quantity in both 1986 and 2004. In 2004 it was accompanied by *Fumaria officinalis subsp. wirtgenii* Common Fumitory, *Lamium amplexicaule* Henbit Dead-nettle, *L. hybridum* Cut-leaved Dead-nettle, *Ranunculus sardous* Hairy Buttercup and *Viola tricolor* Wild Pansy. *Anagallis arvensis* Scarlet Pimpernel was recorded here in 1986. There were several other records of the rapidly-declining *Anagallis arvensis* Scarlet Pimpernel in the 1980's and 1990's, but it has only been seen once since 1999, near Broomdykes. *Viola tricolor* Wild Pansy was seen only once in 2012, near Mouth Bridge with *Thlaspi arvense* Field Penny-cress. *Persicaria lapathifolia* Pale Persicaria occurs rarely in damp field corners but is also found as a riverside plant. A large population of *Mentha arvensis* Corn Mint was seen in turnips near Blackadder Mount in 1986, the only relatively recent record for this species in Berwickshire in an arable habitat. Back in 1986 *Papaver dubium subsp. lecoqii* Yellow-juiced Poppy was noted in the vegetable garden of what was then the Chirnside House Hotel; in 1999 it was found again by Edington Castle. Arable weeds have recently been sown in quantity at Oldcastles in conservation strips. *Centaurea cyanus* Cornflower and *Chrysanthemum segetum* Corn Marigold have been accompanied by grassland species such as *Daucus carota subsp. carota* Wild Carrot and *Malva moschata* Musk Mallow while the presence of *Sherardia arvensis* Field Madder may relate to an accidental introduction or to a surviving seed bank. *Melilotus* Melilot species have been sown in game crops.

The **roadsides** have the now-ubiquitous halophytes *Atriplex prostrata* Spear-leaved Orache, *Puccinellia distans* Reflexed Saltmarsh-grass and *Spergularia marina* Lesser Sea-spurrey (but not *Cochlearia danica* Danish Scurvygrass), recently joined by *Sagina maritima* Sea Pearlwort which was seen once in 2012. However *Atriplex littoralis* Grass-leaved Orache, seen near Edington Castle in 1999, has not persisted. *Rumex longifolius* Northern Dock, found at the roadside near Chirnside in 1998, was not recorded in the hectad in 2012 but one plant was found below Oldcastles in 2013. There has been no increase in *Artemisia vulgaris* Mugwort, which remains a very local species in Berwickshire.

NT86 Grantshouse

(Systematic sample surveys 1996, 2011)

Overview

99% of the hectad NT86 is land, all of which falls in Berwickshire. It lies between sea level and 268m at Drakemire Strips on the slopes of Bunkle Edge.

Most of the hectad lies on Silurian rocks but a tongue of Lower Old Red Sandstone underlies the villages of Auchencrow, Reston and Coldingham. The Silurian is not all acid rock: there are streaks of calcareous sandstone and some small intrusive features.

This is one of the most species-rich hectads in Berwickshire with a short stretch of coast, woodland, grassland, arable, wetland and moorland. While much of the natural habitat has become fragmented, there is a fine section of grassland, wetland and moorland at Coldingham Common, Dowlaw Moss and Lumsdaine Dean which is distinct from comparable habitats further inland in Berwickshire on account of the oceanic influence. Coldingham Loch is the only natural loch of any size in the county.

There is now conifer forestry at Penmanshiel Moor and Lumsdaine Moor with some smaller blocks elsewhere. A wind farm has been erected at Moor House.

There are villages at Auchencrow, Grantshouse, Reston and Coldingham. The A1 trunk road and the railway pass through the hectad following the Eye Water upstream to the low ridge at 118m near Grantshouse which separates its watershed from that of the Pease Burn.

Sites with at least moderately good habitat	GR - NT
Grantshouse, Eye Water	8064, 8065, 8164
Redclues Cleugh (see NT76)	8068
Greenside Hill	8068
Old Cambus Townhead	8068, 8069
Grantshouse Quarry, Brockholes Wood	8165, 8265
Winding Burn, Howpark Burn	8165, 8166, 8266
Atton Dean	8264
Greenburn Plantation	8361
Harly Darlies	8369
Drone Moss and moor adjacent	8466, 8467
Dowlaw Moss	8369, 8468, 8469
Long Moss, Coldingham Common	8468, 8567, 8568
Lumsdaine Dean	8569, 8669
Lowries Knowes	8569
Rough Heugh, Brander Heugh (part NT87)	8769, 8770
Buskin Burn	8866, 8867, 8965, 8966
Westerside Dean	8869
Coldingham Loch	8968
Earnsheugh	8969

Habitats

The low altitude **moorland** on the Silurian is in many ways the key feature of the hectad. There was formerly moorland along the ridge known as Bunkle Edge, but this has been lost together with a wetland complex at Drakemire, leaving a few tantalising patches of moorland habitat in the shelter belts.

Penmanshiel Moor with its bogs has gone too, as has part of the moorland and moorland-edge at Lumsdaine. *Lycopodium clavatum* Stag's-horn Clubmoss has colonised by the new forestry tracks at Penmanshiel Moor and a range of moorland species still find a restricted home there. The convoluted ownership history of Coldingham Common has contributed to its survival. Part of the main block of heather is now ungrazed under a SNH management agreement and the lack of grazing is allowing coarse grasses to invade the rich flush system. The adjacent land at Dowlaw Moss and Lumsdaine Dean is grazed by sheep and cattle and, despite changes over the years, some fine habitats prosper with an acid fen, base-rich flushes, rocky knowes and an area of species-rich wet meadow, the last the only surviving example of its kind in Berwickshire that is relatively undamaged.

Sloes Lumsdaine Dean 2001

Dowlaw Moss has been partly drained in the past and there is no longer any permanent open water, but *Carex curta* White Sedge, *Drosera rotundifolia* Round-leaved Sundew and *Potentilla palustris* Marsh Cinquefoil flourish with much *Hydrocotyle vulgaris* Marsh Pennywort at the margins. The moorland-edge adjacent has a small colony of *Potentilla anglica* Trailing Tormentil. Dowlaw Burn follows a post-glacial meltwater channel cut northeast across the line of the natural south-easterly fall of the land. The head of the burn is marked by a fine series of flushes. Here grow colonies of *Dactylorhiza incarnata* Early Marsh-orchid, both *subsp. incarnata* and *subsp. pulchella*, with *Eleocharis quinqueflora* Few-flowered Spike-rush, *Narthecium ossifragum* Bog Asphodel, *Parnassia palustris* Grass-of-Parnassus, *Pedicularis palustris* Marsh Lousewort and *Sagina nodosa* Knotted Pearlwort. The knowes by the burn mark the beginning of Lumsdaine Dean and have *Erica cinerea* Bell Heather, *Helianthemum nummularium* Common Rockrose and *Koeleria macrantha* Crested Hair-grass. A few spikes of *Gymnadenia conopsea* Fragrant Orchid still appear in the grassland with a little *Salix repens* Creeping Willow. Downstream the dean deepens sharply with waterfalls and the rocky banks provide habitat for a number of annual species: *Filago minima* Small Cudweed, *F. vulgaris* Common Cudweed and *Spergularia rubra* Sand Spurrey with *Cynoglossum officinale* Hound's-tongue. *Orobanche alba* Thyme Broomrape was discovered on the screes in 2014. *Prunus padus* Bird Cherry, *Rosa pimpinellifolia* Burnet Rose, *R. rubiginosa* Sweet-briar and *Solidago virgaurea* Goldenrod are found by the burnside. To the south, just above the dean, the series of flushes continues with *Eriophorum latifolium* Broad-leaved Cottongrass, *Euphrasia scottica* Eyebright and *Selaginella selaginoides* Lesser Clubmoss in addition to most of the species in the flushes higher up the burn. Intergrading with the flushes, the species-rich wet meadow has *Alchemilla filicaulis subsp. vestita* Hairy Lady's-mantle, *Briza media* Quaking-grass, *Dactylorhiza fuchsii* Common Spotted-orchid, *Festuca pratensis* Meadow Fescue,

Lumsdaine Dean 2001

Geranium sylvaticum Wood Crane's-bill, *Geum rivale* Water Avens, *Helictotrichon pubescens* Downy Oat-grass, *Trifolium medium* Zigzag Clover and *Valeriana dioica* Marsh Valerian.

In the centre of Coldingham Common lies Long Moss, a valley mire much cut over for peat by the feuars. Some of the horrendous peat-holes have *Vaccinium oxycoccos* Cranberry. Around a small bog pool there is a considerable area with birch and willow carr and some open areas where wetland communities have re-stabilised following the cessation of peat cutting. *Corallorhiza trifida* Coralroot Orchid and *Pyrola minor* Common Wintergreen are found in the woodland while *Trientalis europaea* Chickweed-wintergreen flourishes in the wetland. However *Platanthera bifolia* Lesser Butterfly-orchid has not been refound in recent years. The drainage to the north leads into the flushed area that extends down to the Dowlaw Burn. Sadly there is now a high risk of invasion by *Picea sitchensis* Sitka Spruce and *Rhododendron* from the recent forestry plantings adjacent.

South of Moor House much of the moorland is now the site for a wind farm but there is an area of wet heath adjacent to Drone Moss. This raised bog has been cut over and very little active *Sphagnum* moss remains with its *Vaccinium oxycoccos* Cranberry and *Narthecium ossifragum* Bog Asphodel. It is overlooked by a caravan park whence *Rhododendron* is invading. The birch and willow carr at the fringe conceals some base-rich springs where a good colony of *Trollius europaeus* Globeflower survives with *Listera ovata* Common Twayblade. *Pinguicula vulgaris* Common Butterwort is found in a more open community. *Trientalis europaea* Chickweed-wintergreen is present in modest quantity at the edge of the rand woodland. Some of the pools in the woodland have *Carex curta* White Sedge at their edges and one has a colony of *Hippuris vulgaris* Mare's-tail.

A scrap of wet birchwood at Silverwells, all that remains of formerly more diverse habitat, was also a site for *Corallorhiza trifida* Coralroot Orchid until recently, but part was developed as a woodland garden in connection with a nursery and the orchid does not appear to have survived though *Carex remota* Remote Sedge has been seen recently in the glen below. A few unexpected garden plants have naturalised in the glen. There is a colony of *Primula florindae* Tibetan Cowslip and a few inoffensive plants of *Lysichiton americanus* American Skunk-cabbage.

Woodland is mainly represented by plantations on the site of former oakwoods along the Eye Water and by small deans. The oakwoods were once managed by the monks of Coldingham Priory. Around Grantshouse a small part of the Penmanshiel woods falls in the hectad including Redclues Cleugh whose oaks have *Ceratocapnos claviculata* Climbing Corydalis and *Melica uniflora* Wood Melick as associates, with a lone bush of juniper by the head of the burn. The Howpark Burn above Grantshouse, with its tributaries Winding Burn and Harelaw Burn, has a little natural woodland. Here the wood pasture has been superseded by new planting which is eliminating the grassland species. *Juniperus communis* Juniper and *Rosa pimpinellifolia* Burnet Rose are accompanied by *Gymnocarpium dryopteris* Oak Fern, *Helianthemum nummularium* Common Rockrose and *Sanicula europaea* Sanicle. A lone bush of *Salix myrsinifolia* Dark-leaved Willow could not be refound in 2011. Following the Eye Water downstream from Grantshouse, *Prunus padus* Bird Cherry is much in evidence and Brockholes Wood still has an excellent ground flora of *Hyacinthoides non-scripta* Bluebell with much *Adoxa moschatellina* Moschatel and a few old oak stumps under the plantation. Atton Dean has *Galium odoratum* Woodruff, *Melica uniflora* Wood Melick and *Polystichum aculeatum* Hard Shield-fern. Brockholes Dean also has the *Melica*, though it has recently been converted into an arboretum for exotic trees and shrubs. Little is left of the old Green Wood, though *Carex laevigata* Smooth-stalked Sedge and *C. remota* Remote Sedge survive precariously at the plantation margin with old bushes of *Viburnum opulus* Guelder-rose which could conceivably be native, unlike those in the plantings nearby. There is a small colony of *Stachys officinalis* Betony on a bank nearby. Houndwood no longer has a wood of that name, other than some wet scraps with a large colony of *Galium odoratum* Woodruff, which is so robust that it may be a horticultural variety naturalised here. Considerable efforts have been made to restore woodland habitat by the Eye Water below Houndwood following the construction of dual carriageway on the A1 and some wildflower mixes have been sown quite extensively.

Lythrum salicaria Purple-loosestrife and *Sanguisorba officinalis* Great Burnet have established with a substantial quantity of *Rhinanthus minor* Yellow-rattle. There are further scraps of woodland at Howburn and Coveyheugh with modest deans at Lemington and Houndwood House.

A further series of deans are found along burns flowing southeast to the Ale Water, Fleurs and Coldingham. While the immediate policies of Press Castle have some pleasant woodland habitat, such habitat upstream by the Grange Burns has been almost entirely absorbed by housing and conifer plantation though there is still one good colony of *Pyrola minor* Common Wintergreen. *Claytonia sibirica* Pink Purslane has colonised not unpleasantly from Press Castle down the length of the Ale Water. The lower parts of Buskin Burn run through a dean down to Coldingham. The trees are mainly plantings but the rocky burnsides and the banks above have quite a rich woodland flora. There is much *Phyllitis scolopendrium* Hart's-tongue Fern and *Polystichum aculeatum* Hard Shield-fern by the burn with a little *P. setiferum* Soft Shield-fern and their hybrid, *P. x bicknellii*. *Campanula latifolia* Giant Bellflower is rather scarce.

To the west of Auchencrow there is a plantation at Greenburn, south of Bunkle Edge, with tiny remnants of a moorland-edge and dean woodland flora including *Carex viridula subsp. brachyrrhyncha* Long-stalked Yellow-sedge, *Erica tetralix* Cross-leaved Heath, *Polystichum aculeatum* Hard Shield-fern and *Stellaria holostea* Greater Stitchwort

Some of the **wetlands** have been mentioned under moorland. At Old Cambus Townhead there is a pond where the water level used to fluctuate leaving a muddy margin which was a habitat for *Apium inundatum* Lesser Marshwort and *Lythrum portula* Water-purslane, but eutrophication, succession and the exclusion of grazing have all but eliminated the mud and neither of these species was refound in 2011. The former moorland setting of this pond has been lost. At Harly Darlies there is small moss, rather separate from the Dowlaw Moss complex, with *Carex curta* White Sedge and *Hippuris vulgaris* Mare's-tail. Towards Dowlaw lies Lowries Knowes pond, which is a reservoir with a dam. The water level fluctuates widely and, in suitable years, *Lythrum portula* Water-purslane and *Ranunculus peltatus* Pond Water-crowfoot may thrive. However *Littorella uniflora* Shoreweed appears to have gone, probably in response to eutrophication. Another reservoir at West Loch had an unexpected population of *Stellaria neglecta* Greater Chickweed near the margin, but this is now part of the grounds of a house and has not been visited recently.

Weed-cutting boat Coldingham Loch 2011

Coldingham Loch is an altogether more significant water body with *Nuphar lutea* Yellow Water-lily, *Potamogeton filiformis* Slender-leaved Pondweed and *P. x nitens* Bright-leaved Pondweed. It also has interesting charophytes, *Chara virgata* and *Tolypella glomerata*. A *Nitella* species has been recorded in the past and could persist. However the loch is unfavourably managed for the botanical interest, despite being an SSSI. It is a put-and-take trout fishery and a mechanical weed-cutter is employed without restraint. Meanwhile a secluded open pool at the north end has been overwhelmed by *Phragmites* Reed. The adjacent ground has largely lost its natural habitat and there appears to be considerable fertiliser run-off from the adjacent fields to the loch.

A new water body of note is Loch Rickie at Lumsdaine. Quite a large water body has been created from former wetland where *Menyanthes trifoliata* Bogbean is now flourishing and *Nuphar lutea* Yellow Water-lily has been successfully introduced.

Some wetland habitat survives on the haughs of the Eye Water above Grantshouse, despite drainage work, but the fragmented habitats are only modestly species-rich.

St Abbs Head from Dowlaw Dean 2012

Inland grasslands away from the Lumsdaine Dean complex include a tiny knowe at Greenlaw Knowe (or Knowle) with the annuals *Cerastium semidecandrum* Little Mouse-ear, *Stellaria pallida* Lesser Chickweed and *Vulpia bromoides* Squirrel-tail Fescue with *Arabis hirsuta* Hairy Rock-cress. Fields at Westerside and West Loch have a series of rocky knowes in otherwise reseeded fields with small populations of a slightly different set of annuals: *Cerastium semidecandrum* Little Mouse-ear, *Geranium pusillum* Small-flowered Crane's-bill, *Montia fontana subsp. chondrosperma* Blinks, *Sagina apetala subsp. apetala* Fringed Pearlwort and *Vulpia bromoides* Squirrel-tail Fescue. However these populations have declined sharply in recent years and *Stellaria pallida* Lesser Chickweed is perhaps the only specialist species to survive in any quantity in the fields themselves though there is an excellent colony of *Cerastium arvense* Field Mouse-ear on the verge of the lane between Pilmuir and West Loch with a little *C. x maueri*. The *C. tomentosum* Snow-in-summer parent grows nearby at the entrance to Pilmuir.

Shore below Westerside 2011

The **coast** is but a short strip and is mainly spectacular cliffs. The braes and shore by Brander Heugh at Lumsdaine Shore in NT87 have a wide range of habitats, shared with the section in hectad NT86 known as Rough Heugh. *Carlina vulgaris* Carline Thistle, *Polygala vulgaris* Common Milkwort, *Thalictrum minus* Lesser Meadow-rue and *Vicia sylvatica* Wood Vetch are features of the braes. *Asplenium marinum* Sea Spleenwort and *Sedum rosea* Roseroot occur on the cliffs and stacs with fluctuating colonies of *Glaucium flavum* Yellow Horned-poppy and *Ligusticum scoticum* Scots Lovage on the shore. The more sandy parts of the beach support *Atriplex laciniata* Frosted Orache, *Cakile maritima* Sea Rocket, *Carex arenaria* Sand Sedge, *Elytrigia juncea* Sand Couch and *Honckenya peploides* Sea Sandwort. The former colony of *Dianthus deltoides* Maiden Pink, perhaps the last surviving coastal colony, was destroyed when an access track was constructed in the 1990's but the lack of grazing was already threatening it. *Trifolium arvense* Hare's-foot Clover survives in a gorge. *Sedum rosea* Roseroot is also found here but is more plentiful below Westerside Dean to the southeast where *Asplenium marinum* Sea Spleenwort, *Carex otrubae* False Fox-sedge and *Ligusticum scoticum*

Scots Lovage are present and one plant of *Atriplex x taschereaui* Taschereau's Orache was found in 2011. The cliff top by Westerside Dean still has a little *Astragalus danicus* Purple Milk-vetch, *Erodium cicutarium* Common Stork's-bill and *Filago minima* Small Cudweed. Much more secure are *Koeleria macrantha* Crested Hair-grass, *Orchis mascula* Early-purple Orchid, *Primula veris* Cowslip and *Saxifraga granulata* Meadow Saxifrage. There is a large suckering patch of *Rosa pimpinellifolia* Burnet Rose in the dean. The hillside in the field to the southeast of the dean has good colonies of *Hyacinthoides non-scripta* Bluebell.

Arable weed habitats are fairly restricted. At Sunnyside near Auchencrow one plant each of *Centaurea cyanus* Cornflower and *Chrysanthemum segetum* Corn Marigold appeared in set-aside in 2005 with *Fumaria bastardii* Tall Ramping-fumitory, *F. densiflora* Dense-flowered Fumitory and *F. purpurea* Purple Ramping-fumitory, an amazing assemblage for Berwickshire. *Anagallis arvensis* Scarlet Pimpernel and *Fumaria bastardii* Tall Ramping-fumitory were seen in a field near Silverwells Dean in 2002. *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle are fairly widespread. A spectacular show of arable weeds, especially poppies *Papaver* species, could formerly be seen at Reston Sand Quarry, but this has now been closed and only tiny fragments of ruderal habitat remain there.

The **quarry** at Grantshouse is now disused. There *Filago vulgaris* Common Cudweed and *Myosotis ramosissima* Early Forget-me-not grow on the old quarry floor and on spoil heaps. *Ribes sanguineum* Flowering Currant is well-naturalised nearby.

Allium paradoxum Few-flowered Garlic is an **intrusive neophyte** that has spread dramatically across the hectad along the Eye Water in the last decade and may be expected to bulk up its populations in the years ahead to the detriment of other vernal woodland species. *Buddleja davidii* Butterfly-bush has colonised recently in Reston but is not really a problem there.

The main roads have the usual halophytes. *Rumex longifolius* Northern Dock had colonised the verges of the A1 quite extensively between 1996 and 2007 but only three plants could be found in 2011, a remarkable decline. The railway cuttings have not been botanised.

NT87 Dowlaw

(Systematic sample surveys 1998, 2012)

Overview

Only 6% of the hectad NT87 is land, all of which falls in Berwickshire. It lies between sea level and 174m at Telegraph Hill.

Most of the hectad lies on Silurian rocks but a tongue of Lower Old Red Sandstone running along the coast as far to the east as Red Heugh gives rise to the classic unconformity between the two at Siccar Point. The Silurian is not all acid rock: there are streaks of calcareous sandstone and some small intrusive features.

The rugged coastline accounts for most of the land area. Although it has more wilderness character than anywhere else in Berwickshire it is far from pristine. Improved fields abut the sea braes except for a limited area of degraded moorland above Rammel Cove and at Telegraph Hill and the sea braes are almost devoid of woodland, so the range of habitats is limited. Dowlaw Dean is a savage place which captures the imagination of all who visit it, but it too is far from pristine.

A turnip factory now blights Old Cambus Quarry though access to the world heritage geological site at Siccar Point is now served by a car park.

There are farmsteads at Old Cambus West Mains, Redheugh and Dowlaw with some arable land. A car park at Dowlaw provides access to the ruins of Fast Castle.

Sites with at least moderately good habitat	**GR - NT**
Old Cambus Quarry and fields near	8070
St Helen's Church, below	8070
Siccar Point	8170
Redheugh	8270
Lansey Bank, Midden Craig	8370
Rammel Cove	8470
Telegraph Hill	8570
Fast Castle	8670, 8671
Dowlaw Dean	8670
Dowlaw Dean, fields near (part NT86)	8670, 8769, 8770
Brander Heugh (see NT86)	8770

Habitats

Fast Castle 2008

The **coastline** with its cliffs and sea braes is the principal habitat. Access to the shore is limited by the cliffs and the beaches are but rough boulders, except at Brander Heugh. *Glaucium flavum* Yellow Horned-poppy occurs sporadically on the beach below the ruins of St Helen's Church with *Cochlearia officinalis subsp. scotica* Scottish Scurvygrass above. The latter has also been found at Siccar Point. The shore below St Helen's Church and near Siccar Point has *Carex distans* Distant Sedge, *Elytrigia juncea* Sand Couch, *Honckenya peploides* Sea Sandwort and *Juncus gerardii* Saltmarsh Rush. The braes above on the Old Red Sandstone are only locally species-rich with *Anthyllis vulneraria* Kidney Vetch, *Helianthemum nummularium* Common Rockrose, *Koeleria macrantha* Crested Hair-grass, *Orchis mascula* Early-purple Orchid. Some slopes have *Hyacinthoides non-scripta* Bluebell under bracken. The limited flushed areas have much *Eupatorium cannabinum* Hemp-agrimony. *Stellaria pallida* Lesser Chickweed occurs on knowes in the fields near St Helen's Church but is absent from the sea braes, or almost so.

To the east, near Red Heugh and at Menzies Cleugh, there is a wider range of habitats. The braes add *Astragalus danicus* Purple Milk-vetch, *Gymnadenia conopsea* Fragrant Orchid, *Ononis repens* Common Restharrow, *Polygala vulgaris* Common Milkwort, *Pinguicula vulgaris* Common Butterwort and *Saxifraga granulata* Meadow Saxifrage to the species present to the west. There is also a short but spectacular dean through the Old Red Sandstone which has a few woodland species such as *Mercurialis perennis* Dog's Mercury and *Stellaria holostea* Greater Stitchwort as well as the species of the sea braes. Here there is a surprising colony of *Anagallis arvensis* Scarlet Pimpernel at the edge of the whins above, while, at the foot of the waterfall, *Primula florindae* Tibetan Cowslip is well naturalised alongside *Dactylorhiza purpurella* Northern Marsh-orchid and *Oenanthe crocata* Hemlock Water-dropwort. *Impatiens glandulifera* Indian

Balsam, now abundant in the upper part of the burn, is a much less acceptable introduction that may well overwhelm the *Primula florindae*.

East on the Silurian rocks *Filago vulgaris* Common Cudweed occurs on an eroding slope at Lansey Bank while a modest colony of *Cirsium heterophyllum* Melancholy Thistle grows with abundant *Equisetum telmateia* Great Horsetail in the flushes. *Ligusticum scoticum* Scots Lovage is frequent on the shore below with *Rubus caesius* Dewberry behind. *Asplenium marinum* Sea Spleenwort grows on Midden Craig.

The cliffs from Rammel Cove to Fast Castle are largely inaccessible though it is just possible to reach a surprising woodland relict above Rammel Cove where dwarfed oak and aspen hug the cliff with *Geranium sylvaticum* Wood Crane's-bill. Soay sheep were introduced to the braes east of Fast Castle for a while but proved a disaster, as they avoid the rougher vegetation and destroy the diverse communities at the cliff tops by herding together and uprooting the turf. *Astragalus danicus* Purple Milk-vetch is now known only on the cliff top at the bay below Dowlaw Dean. Flushed areas have *Equisetum telmateia* Great Horsetail and *Eupatorium cannabinum* Hemp-agrimony. *Asplenium marinum* Sea Spleenwort is known around Fast Castle while *Sedum rosea* Roseroot is recorded at Rammel Cove and between Fast Castle and Dowlaw Dean, but much suitable habitat for these two species is inaccessible.

View up savage Dowlaw Dean 2008

Dowlaw Dean is in many ways an extension of the sea braes and is perhaps most remarkable for the relatively accessible colonies of *Sedum rosea* Roseroot and *Thalictrum minus* Lesser Meadow-rue with *Helianthemum nummularium* Common Rockrose, *Orchis mascula* Early-purple Orchid, *Primula veris* Cowslip, *Saxifraga granulata* Meadow Saxifrage and *Vicia sylvatica* Wood Vetch. The eroding parts of the cliffs that form the sides of the dean, particularly those near its foot, are refugia for further grassland species including *Allium vineale* Wild Onion and *Valerianella locusta* Common Cornsalad. More acid sections have abundant *Hyacinthoides non-scripta* Bluebell. A variety of *Hieracia* Hawkweed microspecies occur on the cliffs themselves. The burnside is modestly wooded with oak and alder. Associated species include *Adoxa moschatellina* Moschatel, *Allium ursinum* Ramsons, *Campanula latifolia* Giant Bellflower, *Geranium sylvaticum* Wood Crane's-bill, *Polypodium interjectum* Intermediate Polypody, *Polystichum aculeatum* Hard Shield-fern and *Rosa pimpinellifolia* Burnet Rose. Parts of the dean have recently become overrun with brambles.

Old Cambus Quarry, like Dowlaw Dean, is a glacial meltwater channel, but is uncomprisingly acid. The quarrying and the recent anomalous construction of a factory have changed its appearance and have eliminated much of the sandy grassland at the foot of the rocky sides of the dean. The annual **grassland** species *Cerastium semidecandrum* Little Mouse-ear, *Filago minima* Small Cudweed, *F. vulgaris* Common Cudweed, *Geranium pusillum* Small-flowered Crane's-bill, *Montia fontana subsp. chondrosperma* Blinks, *Myosotis ramosissima* Early Forget-me-not, *Sagina apetala subsp. apetala* Fringed Pearlwort, and *Trifolium striatum* Knotted Clover have a precarious existence on un-quarried knowes. *Spergularia rubra* Sand Spurrey is more widespread. *Hyacinthoides non-scripta* Bluebell is still plentiful. A small **pond** and associated wetland has *Callitriche hamulata* Intermediate Water-starwort, *Ranunculus aquatilis* Common Water-crowfoot and *Ranunculus peltatus* Pond Water-crowfoot.

Telegraph Hill is mainly a mix of species-poor **moorland** and **acid grassland** of interest because of the maritime influence. The knowes have modest interest as refugia for *Sagina apetala subsp. apetala* Fringed Pearlwort, *Scleranthus annuus* Annual Knawel and *Spergularia rubra* Sand Spurrey, but their populations are very small and may have already been lost.

***Astragalus danicus* cliff-edge Red Heugh 2012**

Despite adverse management, the grassland on the knowes in the fields east of Dowlaw Dean still support a rich community of annuals including *Montia fontana subsp. chondrosperma* Blinks, *Myosotis ramosissima* Early Forget-me-not, *Sherardia arvensis* Field Madder, *Stellaria pallida* Lesser Chickweed, *Vicia lathyroides* Spring Vetch and *Vulpia bromoides* Squirrel-tail Fescue with *Cerastium arvense* Field Mouse-ear. The colonies of *Vicia lathyroides* Spring Vetch are much the largest in Berwickshire.

The **arable weed** flora is quite diverse when cropping allows it to show. Sadly the fields between Dowlaw and Dowlaw Dean are no longer cultivated and indeed part has been planted with a curious mix of trees, including *Pinus pinaster* Maritime Pine, some of which might seed into Dowlaw Dean. Species lost include *Erodium cicutarium* Common Stork's-bill and *Stachys arvensis* Field Woundwort. Fields near the head of Dowlaw Dean have *Anagallis arvensis* Scarlet Pimpernel, *Fumaria densiflora* Dense-flowered Fumitory, *Sherardia arvensis* Field Madder, *Thlaspi arvense* Field Penny-wort and the three scarcer annual *Lamium* species, *L. amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle. Some of these species only survive at the margins of small unploughed knowes. Old Cambus West Mains, on the Old Red Sandstone, has *Fumaria officinalis subsp. wirtgenii* Common Fumitory*i*, *Thlaspi arvense* Field Penny-wort and *Urtica urens* Small Nettle.

There is little **ruderal** habitat in the hectad, but *Hordeum murinum* Wall Barley occurs at Old Cambus West Mains and *Vulpia myuros* Rat's-tail Fescue in a compost enterprise at Dowlaw. A filter bed of *Phragmites australis* Common Reed has been installed for the factory outflow at Old Cambus Quarry.

NT94 Fishwick

(Systematic sample surveys 1987, 2007)

Overview

Only 3% of the hectad NT94 is in Berwickshire. It lies between 2m on the Tweed below Fishwick and 54m near Horndean. The geology is calciferous sandstones of the Carboniferous overlain with glacial drift.

The land lies close to the River Tweed where there are grassland and aquatic habitats as well as arable fields. There are also burnside habitats below Horndean.

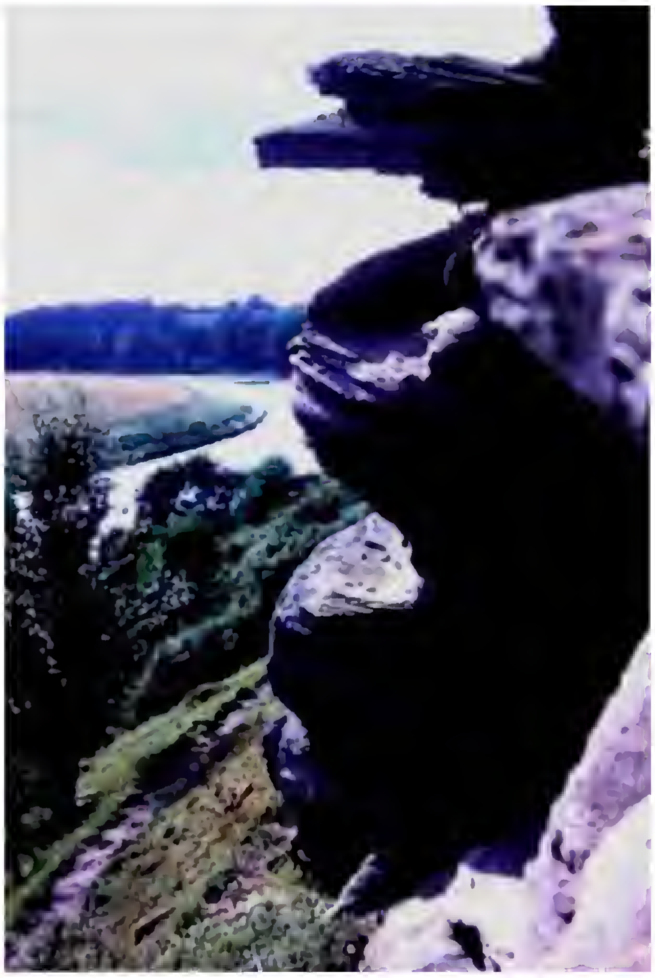
Sites with at least moderately good habitat	GR – NT
Blount Bank, Blount Island (also NT84)	9047
Frockham Brae, Horndean	9048, 9049
Fishwick Mains, riverside below, St Thomas's Island	9149, 9249

Habitats

The **River Tweed** aquatic species are well represented: *Potamogeton lucens* Shining Pondweed, *P. x salicifolius* Willow-leaved Pondweed, *P. pectinatus* Fennel Pondweed and *P. perfoliatus* Perfoliate Pondweed form the core of the pondweed community and are frequent while *P. x olivaceus* Graceful Pondweed occurs below Fishwick Mains. There is a strong colony of *Potamogeton x bottnicus* Bothnian Pondweed at St Thomas's Island and it is also known at the foot of the pool below Blount Bank. With *Ranunculus pencillatus* a taxon traditionally recognised as *R. fluitans* River Water-crowfoot is occasional, but it is probably a hybrid clone rather than the species in view of its low fertility.

The **river banks** of the Tweed are varied with some sandstone rock exposures, dry grassland and woodland fragments. *Agrimonia eupatoria* Agrimony, *Carduus tenuifolius*, *Knautia arvensis* Field Scabious and *Origanum vulgare* Wild Marjoram occur on dry banks while at the river's edge *Acorus calamus* Sweet-flag and *Butomus umbellatus* Flowering-rush are scarce, *Carex acuta* Slender Tufted-sedge is frequent and *Glyceria maxima* Reed Sweet-grass has spread excessively. At the foot of Blount Bank there is a little *Ballota nigra* Black Horehound, *Centaurium erythraea* Common Centaury and *Lactuca virosa* Great Lettuce. Below Fishwick Mains *Ballota nigra* Black Horehound occurs more plentifully on the sandstone rocks with *Cerastium arvense* Field Mouse-ear, *Ranunculus bulbosus* Bulbous Buttercup and *Trifolium striatum* Knotted Clover nearby.

Back from the river, the interest of the woodland at Frockham Brae is mainly localised to the bank above the river. The interest of the burnsides and grassland along Horn Burn, Lyall's Burn and the seepage below Primrose Plantation is localised in marshy areas by the burns and in the grassland on the steepest banks. There is a little *Berula erecta* Lesser Water-parsnip in the burn below Horndean. The woodland fragment just below Horndean village does have woodland axiophytes but, while Primrose Plantation does have *Primula vulgaris*, there is otherwise only a poor ground flora. Nevertheless the mix of habitats is unusually diverse for the lower Tweed.



Sandstone cliffs Fishwick 1983

The **arable fields** adjacent to the river below Fishwick Mains have a rich weed flora. *Fumaria densiflora* Dense-flowered Fumitory occurs with *F. officinalis subsp. wirtgenii* Common Fumitory while *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle grow together. *Amsinckia intermedia* Common Fiddleneck is plentiful. *Draba muralis* Wall Whitlowgrass has colonised the sandy grassland between the fields and the river.

Dipsacus fullonum Teasel Fishwick 1998

NT95 Paxton

(Systematic sample surveys 1999, 2013)

Overview

53% of the coastal hectad NT95 is land that falls in Berwickshire. It lies between sea level and 215m at Lamberton Moor. Berwick-upon-Tweed and its bounds, or 'Liberties', have a history as disputed territory, but today fall within England.

The geology is varied. There is a narrow strip of Carboniferous sandstones and limestones along the coastline, inland the higher ground at Lamberton Moor is Silurian. Paxton and Hutton fall on the Carboniferous sandstone while the slope above Foulden to Edingtonhill is on the upper Old Red Sandstone. This meets the lower Old Red Sandstone at the watershed between the Whiteadder and the Eye Waters.

The cliff top north from the English Border below Lamberton has little of botanical interest but there is a rugged undercliff area below which has a character of its own. North again, below Lamberton Shiels, there is a mix of cliffs and sea braes with a varied series of rock strata giving rise to some species-rich habitats especially at Hilton Bay. Most of Lamberton Moor has been destroyed, but a few surprising pockets of vegetation survive. The banks of the Tweed lack much truly natural vegetation but the extensive policies of Paxton House provide refuge for many woodland species. The aquatic flora of the Tweed is diverse, especially near Union Bridge and just above the English border. The fertile arable land is intersected by the Whiteadder Water which runs in a steep-sided valley that gives the riversides an unexpectedly cloistered feel. Here there are relatively rich aquatic, grassland and woodland habitats, albeit considerably fragmented. Edingtonhill Moor is largely destroyed, but here again fragments survive.

There are villages at Paxton, Hutton and Foulden. The A1 trunk road and the mainline railway pass though the hectad.

Sites with at least moderately good habitat	GR - NT
Foulden Braes	9054, 9154
Edington Hill Covert	9057
Foulden Dean	9154, 9254, 9255
Union Bridge	9250, 9350, 9351
Paxton House	9251, 9252, 9351, 9352, 9452
Clarabad Wood	9253, 9254, 9354
Tibbie Fowler's Glen, Witches Cleugh	9354, 9453, 9454
Edrington Castle, Cawderstanes	9352, 9353, 9452, 9453, 9454
Lambsmill Burn, Edrington House	9354, 9355, 9454, 9455
Lamberton Moor	9557, 9558
Lamberton Undercliff	9757, 9758
Lamberton Shiels, shore below, Hilton Bay, Catcairn Bushes	9658, 9659

Habitats

North over the Border to Lamberton undercliff 2003

The **coastline** north from the English border commences with undercliff below Lamberton. It is extremely rugged and more or less ungrazed. Much of it is species-poor but there is considerable botanical interest. The wet ledges below the cliffs hold a large population of *Carex pendula* Pendulous Sedge. *Equisetum telmateia* Great Horsetail and *Eupatorium cannabinum* Hemp-agrimony are associates. The cliffs themselves have a little *Asplenium marinum* Sea Spleenwort and some colonies of *Populus tremula* Aspen with *Allium ursinum* Ramsons below, suggesting that much of the undercliff is former woodland. While much of the grassland is on the sandstone and is neutral to acid with some bracken, there are some base-rich sections over limestone and calcareous sandstone, often on unstable slopes. Here grow *Agrimonia eupatoria* Agrimony, *Anthyllis vulneraria* Kidney Vetch, *Carlina vulgaris* Carline Thistle, *Centaurium erythraea* Common Centaury, *Gymnadenia conpsea, Orchis mascula* Early-purple Orchid and much *Vicia sylvatica* Wood Vetch. A little *Pinguicula vulgaris* Common Butterwort occurs in flushes. There are colonies of *Rubus caesius* Dewberry.

The next section northwards includes some small areas of limestone grassland at Hilton Bay which have a specialised community notable for *Alchemilla glaucescens* Silky Lady's-mantle and *Sanguisorba minor* Salad Burnet. These have *Catapodium rigidum* Fern-grass, *Polygala vulgaris* Common Milkwort and *Primula veris* Cowslip as associates. More widely distributed are *Agrimonia eupatoria* Agrimony, *Carlina vulgaris* Carline Thistle and *Helianthemum nummularium* Common Rockrose, indeed this may be the best population of the *Agrimonia* in Berwickshire. There is much small-scale habitat variety providing limited opportunities for *Centaurium erythraea* Common Centaury, *Myosotis ramosissima* Early Forget-me-not, *Trifolium arvense* Hare's-foot Clover, *T. striatum* Knotted Clover, *Valerianella locusta* Common Cornsalad, *Viola canina* Heath Dog-violet and *V. hirta* Hairy Violet in dry grassland and for *Eleocharis* *quinqueflora* Few-flowered Spike-rush, *Parnassia palustris* Grass-of-Parnassus, *Pinguicula vulgaris* Common Butterwort and *Selaginella selaginoides* Lesser Clubmoss in flushes. Two small bushes of juniper occur on the cliffs, the only known survival on the coast. *Astragalus danicus* Purple Milk-vetch grows at the cliff-edge near the ruins of a salmon netting station. It was thought that *Leontodon saxatilis* Lesser Hawkbit occurred here, but the plant has now been demonstrated to be a small form of *Leontodon hispidus* Rough Hawkbit, with the normal form not far away. *Gymnadenia conopsea* Fragrant Orchid was found here in quantity in 2014.

Hilton Bay with new anti-erosion measures 1999

The presence of the railway precariously close above the eroding slopes of Hilton Bay has led to drastic engineering action. Massive boulders have recently been landed on the beach to build a breakwater to reduce the erosion and plastic netting has been draped over the eroding slopes themselves with a wall of concrete blocks at its foot. The engineering has been fairly successful, which is very bad news for the specialised flora dependent on the erosion to keep the grassland habitat open. The netting has encouraged the spread of whins and other scrub species, so the prospects for the scarce grassland species are bleak indeed, so much so that *Alchemilla glaucescens* Silky Lady's-mantle could not be refound in 2013.

The former **moorland** above the coast at Lamberton is famous for the remarkable discovery of *Tofieldia pusilla* Scottish Asphodel by John Ray in 1671, new to science, though its locality is now thought to have been just on the English side of the border. Agricultural development of the moorland was much delayed by it being a former war zone and having a fragmented ownership structure. Surprisingly a little survives to this day. One field has a large wet hollow where a calcareous flush community survives more or less intact with *Carex dioica* Dioecious Sedge, *Dactylorhiza incarnata* Early Marsh-orchid in two colour forms (or subspecies), *Eleocharis quinqueflora* Few-flowered Spike-rush, *Eriophorum latifolium* Broad-leaved Cottongrass, *Parnassia palustris* Grass-of-Parnassus, *Pedicularis palustris* Marsh Lousewort, *Sagina nodosa* Knotted Pearlwort, *Schoenus nigricans* Black Bog-rush, *Selaginella selaginoides* Lesser Clubmoss, *Senecio aquaticus* Marsh Ragwort and the charophyte *Chara globularis/virgata* aggregate. The surrounding grassland has *Helictotrichon pubescens* Downy Oat-grass, *Trifolium medium* Zigzag Clover and *Valeriana dioica* Marsh Valerian. There is an area of acid grassland with some moorland species to the south and a further flush system towards Mordington with more *Carex dioica* Dioecious Sedge and *Eleocharis quinqueflora* Few-flowered Spike-rush. *Cerastium arvense* Field Mouse-ear grows on the knowes nearby.

***Alchemilla glaucescens* 2000**

Whiteadder Water and Cripple Nick 2013

Turning away from the coast to the **River Tweed** it should be noted that the estuary is in England and, though the river is tidal in the hectad, the tides more or less just back-up fresh water so the saline influence is small. The Union Bridge provides an easy point of access to the river and it was the scene for some of the early studies of its aquatic species. *Potamogeton lucens* Shining Pondweed, *P. perfoliatus* Perfoliate Pondweed and *P. x salicifolius* Willow-leaved Pondweed are still present but *P. x bottnicus* Bothnian Pondweed has not been recorded here since 1971. A sandstone cliff a little above the bridge is a station for *Lactuca virosa* Great Lettuce and *Mycelis muralis* Wall Lettuce and this is probably where *Echium vulgare* Viper's-bugloss was recorded in 1966. The status of both the *Lactuca* and the *Mycelis* is debateable, though if they are introductions both are fully naturalised, particularly the *Lactuca*. Just below the bridge the 'female' form of *Petasites hybridus* Butterbur occurs in small quantity at its only Berwickshire station, apparently as a recent colonist. Near Tweedhill there is a river wall with *Campanula latifolia* Giant Bellflower, *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage and *Cystopteris fragilis* Brittle Bladder-fern. Here *Cochlearia megalosperma* Tall Scurvygrass has recently colonised. Downstream at Paxton House there is a greater variety of habitats. The aquatic species are similar but much reduced from excessive weed-cutting by fishing interests, though *Ranunculus fluitans* River Water-crowfoot and *Zannichellia palustris* Horned Pondweed are also recorded with the latter perhaps an indicator of slightly saline conditions through to the English Border where the fish life includes shoals of tiny dabs. The woodland includes modified elm deans with much *Allium ursinum* Ramsons. Two colonies of *Lathraea squamaria* Toothwort are known, the colony under yews by the old ice house being a fine one. *Ranunculus auricomus* Goldilocks Buttercup, so scarce in Berwickshire, is recorded from Linn Dean. *Campanula latifolia* Giant Bellflower and *Sanicula europaea* Sanicle are a little more frequent. Riverside grassland plants include *Ononis repens* Common Restharrow and *Origanum vulgare* Wild Marjoram while *Carex acuta* Slender Tufted-sedge grows at the water's edge with a little *Poa palustris* Swamp Meadow-grass. *Parietaria judaica* Pellitory-of-the-Wall is naturalised on stonework by the river. A pond has recently been colonised by *Lemna minuta* Least Duckweed.

Foulden Braes before scrub encroachment 1984

The **Whiteadder Water** contrasts with the Tweed in having a much greater diversity of grassland and woodland habitats, though the aquatic flora is somewhat poorer. The junction of the Tweed and Whiteadder is in England. The Foulden braes across the Whiteadder from Hutton Castle Mill to Hutton Mill were, until fairly recently, species-rich grassland with a partly intact haugh below, but the haugh received fertiliser for a time before grazing ceased and the braes have now suffered much scrub encroachment. Meanwhile the woodland on the scaurs at Harper Heugh (or Cripple Nick) has suffered from elm die-back, though the elms have now staged a recovery. A fine colony of *Lathyrus sylvestris* Narrow-leaved Everlasting-pea on partly wooded scree under a south-facing cliff at Harper Heugh is a highpoint. This is generally considered to be native. *Mycelis muralis* Wall Lettuce, as elsewhere, is probably an introduction. *Malva neglecta* Dwarf Mallow is always an archaeophyte at best, leaving *M. moschata* Musk Mallow as just possibly native with the equally problematic *Vicia sativa subsp. segetalis* Common Vetch. While these species suggest that their communities might not be easy to classify, comfort may be taken from *Agrimonia eupatoria* Agrimony, *Helianthemum nummularium* Common Rockrose, *Koeleria macrantha* Crested Hair-grass, *Knautia arvensis* Field Scabious, *Ononis repens* Common Restharrow and *Polygala vulgaris* Common Milkwort in defining a recognisable native calcareous grassland flora. A feature of the Whiteadder is the eroding scaurs at bends in the river with scrub woodland. Species favouring such habitat include *Hypericum hirsutum* Hairy St John's-wort, *Origanum vulgare* Wild Marjoram and *Vicia sylvatica* Wood Vetch.

***Scabiosa columbaria* site Foulden Dean 2013**

Foulden Dean is a side-dean off the Whiteadder that has much the same flora as the Foulden Braes but part of it is even more calciferous. Here again there has been recent neglect leading to scrub encroachment and the spread of thistles. *Scabiosa columbaria* Small Scabious just survives on the banks, but the fate of *Listera ovata* Common Twayblade and *Viola hirta* Hairy Violet is uncertain. Other species present are *Agrimonia eupatoria* Agrimony and *Ranunculus bulbosus* Bulbous Buttercup with *Carex viridula subsp. brachyrrhyncha* Long-stalked Yellow-sedge, *Dactylorhiza purpurella* Northern Marsh-orchid, *Festuca pratensis* Meadow Fescue, *Geum rivale* Water Avens and *Triglochin palustre* Marsh Arrowgrass near the burn below. Below Hutton Bridge stands Clarabad with a long strip of scrub woodland on the eroding bank below. This has a reasonably complete woodland flora and more hazel than is normal in Berwickshire. Species present include *Phyllitis scolopendrium* Hart's-tongue Fern, *Polystichum aculeatum* Hard Shield-fern, *Rubus caesius* Dewberry, *Sanicula europaea* Sanicle and *Veronica montana* Wood Speedwell. Following the Whiteadder downstream below Clarabad Mill one comes to the secluded valley know as Tibbie Fowler’s Glen after a reclusive woman, supposedly a witch, who once had a cottage there. Much the same mix of species occurs on the braes with further scrub encroachment until the bend of the river is reached where Witches Cleugh lies. The banks here are rich in *Hieracium* Hawkweed microspecies and *Echium vulgare* Viper's-bugloss is present on a cliff as is *Primula veris* Cowslip above but *Orchis mascula* Early-purple Orchid has not been seen recently.

The Lambsmill Burn runs through another side-dean to the Whiteadder. The woodland is much modified but there is a linn below Edrington House where *Poystichum aculeatum* and *P. setiferum* Soft Shield-fern occur with their hybrid. Woodland species present include *Campanula latifolia* Giant Bellflower, but the

Gymnadenia conopsea Fragrant Orchid and *Listera ovata* Common Twayblade recorded in 1979 are probably lost.

Below Witches Cleugh the Whiteadder runs to Edrington Castle and Cawderstanes. The river here is the station for a colony of *Ranunculus x kelchoensis* Kelso Water-crowfoot, sadly now almost extirpated from excessive weed-cutting by fishing interests. There are oxbows by the river with *Alisma plantago-aquatica* Water-plantain, *Iris pseudacorus* Yellow Iris and *Scirpus sylvaticus* Wood Club-rush. This section was until recently overrun with *Heracleum mantegazzianum* Giant Hogweed. While that species is much reduced, *Allium paradoxum* Few-flowered Garlic and *Impatiens glandulifera* Indian Balsam abound leaving vanishingly little habitat for *Chrysosplenium alternifolium* Alternate-leaved Golden-saxifrage, which could not be refound in 2013. The woodland above the river now holds a sizable colony of *Carex pendula* Pendulous Sedge, believed to have colonised from Paxton village nearby.

David McCosh with *Hieracium* Witches Cleugh 1987

Scrophularia umbrosa Green Figwort and *Symphytum tuberosum* Tuberous Comfrey are widespread by the Whiteadder and the Tweed while *Butomus umbellatus* Flowering-rush has recently become rather plentiful by the Whiteadder.

The hill road from Chirnside to Ayton crosses former **moorland** at Edingtonhill. The Covert there has birchwood with remnants of the moorland flora. *Ceratocapnos claviculata* Climbing Corydalis is a notable species recorded here in some quantity. A somewhat similar fragment occurs at Hag Wood to the east again with the *Ceratocapnos*, but this wood is even more modified.

Whiteadder Water from Witches Cleugh 2013

Ruderal habitat fragments include part of the former Winfield airfield with *Echium vulgare* Viper's-bugloss, *Galium mollugo* Hedge Bedstraw and *Sherardia arvensis* Field Madder on the old runway. *Humulus lupulus* Hop occurs in hedges near Paxton where it was first noted in 1831, it also occurs by the Tweed near the foot of the Paxton Linn Burn where it is probably self-sown.

Arable weeds have a hard time of it in the intensively farmed cereal land near the Tweed and the Whiteadder. *Chrysanthemum segetum* Corn Marigold is plentiful in some years below Lamberton. There are some fields on the hill above Mordington and Foulden where *Fumaria bastardii* Tall Ramping-fumitory and *F. densiflora* Dense-flowered Fumitory have recently shown up in crops other than cereals. *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle are rather more widespread. *Anthemis arvensis* Corn Chamomile, *Centaurea cyanus* Cornflower and

***Heracleum* hybrid and FFWAG party below Paxton 1984**

Chrysanthemum segetum Corn Marigold were sown in quantity in 2008 in a strip of turnips grown as game cover near Mordington House. *Papaver dubium subsp. lecoqii* Yellow-juiced Poppy has been noted around Paxton and Foulden villages, while *Veronica polita* Grey Field-speedwell occurs in the walled garden at Mordington House.

The **policies** of Mordington House are remarkable for their *Araucaria araucana* Monkey-puzzle. The trees may be 200 years old and both sexes are present. A sapling has been noted at the foot of one of them.

The A1 along the coast has the usual **roadside** halophytes. This was one of the first sections for *Cochlearia danica* Danish Scurvygrass to colonise, back in 1994. *Armeria maritima* Thrift also occurs by the tarmac with a little *Atriplex littoralis* Grass-leaved Orache. *Rumex longifolius* Northern Dock grows back from the road. The **railway** bankings were surveyed by a specially-commissioned team of botanists in 1980, when *Bromopsis erecta* Upright Brome was discovered naturalised near Lamberton. While its presence has been confirmed since, without trespassing on railway property, the full extent of the colony is not known.

NT96 Eyemouth

(Systematic sample surveys 1994, 2010)

Overview

38% of the coastal hectad NT96 is land, all of which falls in Berwickshire. It lies between sea level and 195m at Ayton Hill.

The geology is complex and has been extensively studied. Relatively acid Silurian rocks underlie the higher ground to the west of St Abbs Head and form much of the cliffs between Burnmouth and Eyemouth while tongues of the Lower Old Red Sandstone have weathered to give the productive farmland around Ayton and towards Coldingham. St Abbs Head is an intrusive feature, largely of andesite and basalt but there is vent agglomerate immediately adjacent in Starney Bay. Further andesite outcrops are responsible for the gorges along the Ale Water and for Hairy Ness by Eyemouth Fort. More vent agglomerate outcrops at Killedraught Bay, Fleurs Dean and St Abbs village. Carboniferous sandstones and limestones outcrop around Burnmouth, while Chester Hill is capped by Upper Old Red Sandstone conglomerate.
The complex geology has led to a varied coastline in what is the most species-rich hectad in Berwickshire, despite its limited land area. Sadly the coast is ploughed almost to the cliffs except at St Abbs Head and on the Silurian rock nearby, so the botanical interest is largely on the sea braes and shores. Inland, the main features are the woodlands along the Ale and Eye Waters though there is grassland interest at Chester Hill and north of Millar's Moss.

Eyemouth Harbour 1993

Eyemouth is the largest town in Berwickshire and there are villages at Ayton, Coldingham, St Abbs and Burnmouth. The harbour at Eyemouth has recently been enlarged and there is modest industrial development. There are small harbours at St Abbs and Burnmouth. The A1 trunk road and the mainline railway pass though the hectad.

Sites with at least moderately good habitat	**GR - NT**
Millar's Moss	9067, 9068
Coldingham Bay	9166
St Abbs Village, Northfield	9167, 9168, 9266, 9267
St Abbs Head NNR, Starney Bay	9167
St Abbs Head NNR, St Abbs Head	9168, 9169
St Abbs Head NNR, Petticowick	9068, 9069
West in Thirle, Broadhaven Bay	9068, 9069
Ayton, Ayton Castle, Eye Water	9260, 9261, 9361
Linthill, Ale Water near, Little Dean	9162, 9262, 9263
Old Linthill, Ale Water, Eye Water	9362, 9462
Eyemouth, Eyemouth Fort, Hairy Ness	9363, 9364, 9365, 9463, 9464, 9465
Killiedraught Bay	9364, 9465
Fleurs Dean, Linkim Kip	9165, 9264, 9265
Linkim Shore, Yellow Craig	9265, 9266, 9365
Chester Hill	9560
Burnmouth, south	9560, 9660
Burnmouth, north	9561
Fancove Head	9562
Gunsgreen	9464, 9563, 9564

Habitats

The **coast** provides the principal habitats of the hectad. In the southernmost section around Ross Point the cliffs are steep and inaccessible while above the houses at Ross there is much scrub. The ravine at Ross has lost some of its interest recently, including a flush with *Pinguicula vulgaris* Common Butterwort, but there is *Equisetum telmateia* Great Horsetail and *Eupatorium cannabinum* Hemp-agrimony, the latter a widespread species on the sea braes. The braes north to Burnmouth are rich in *Hieracia* Hawkweed microspecies and *Origanum vulgare* Wild Marjoram is frequent.

Scrub encroachment Burnmouth 2010

The ravine below Burnmouth has crumbling slopes prone to slippages and is very species-rich but, alas, it is now dominated by *Cotoneaster* species and *Centranthus ruber* Red Valerian with sloes and whins also encroaching on the grassland. *Rubus caesius* Dewberry is quite plentiful immediately behind the beach with *Ranunculus sceleratus* Celery-leaved Buttercup nearby, while *Sanguisorba minor* Salad Burnet, *Viola hirta* Hairy Violet, *Myosotis ramosissima* Early Forget-me-not and *Valerianella locusta* Common Cornsalad survive as features of the slopes. The first two of these species are under threat from the intrusive neophytes while the last two struggle in the face of rabbit burrowing and grazing, though the rabbits do help to keep the habitat open. *Leontodon saxatilis* Lesser Hawkbit was thought to be present alongside the *Viola hirta* Hairy Violet but it proves to be a small form of *L. hispidus* Rough Hawkbit. Normal *L. hispidus* is plentiful on the braes not far away. A form of *Petroselinum crispum* Garden Parsley with flat rather than crisped leaves is well naturalised here. Other herbal and cottage garden survivals include *Artemisia absinthium* Wormwood, *Malva moschata* Musk Mallow and *Smyrnium olusatrum* Alexanders. There is a good colony of *Geranium sanguineum* Bloody Crane's-bill just beyond the houses at Partanhall, a rarity in Berwickshire but plentiful on the coast south of Berwick.

As the braes continue north the scrub is mainly sloe and is confined to the higher slopes. Below this there is splendid calcareous grassland with an abundance of *Primula veris* Cowslip and *Orchis mascula* Early-purple Orchid accompanied by *Carlina vulgaris* Carline Thistle, *Helianthemum nummularium* Common Rockrose, *Polygala vulgaris* Common Milkwort, *Saxifraga granulata* Meadow Saxifrage and great masses of *Vicia sylvatica* Wood Vetch. *Arabis hirsuta* Hairy Rock-cress, *Catapodium rigidum* Fern-grass, *C. marinum* Sea Fern-grass, *Thalictrum minus* Lesser Meadow-rue, *Trifolium fragiferum* Strawberry Clover and *Viola canina* Heath Dog-violet are present in small quantity with *Ligusticum scoticum* Scots Lovage and *Triglochin maritimum* Sea Arrowgrass on the rocks at the shore. The vegetation changes abruptly where the Silurian rocks begin and the coast north is mainly inaccessible cliff. The bay just beyond Fancove Head has some accessible ledges where the calcareous grassland species reappear. The land drops away beyond Blaikie Heugh and on the slope past Horse Head there are small colonies of *Viola tricolor* Wild Pansy in the grassland.

***Cotoneaster integrifolius* Burnmouth braes 1994**

The coast south of Eyemouth, seaward of Gunsgreen, is varied and interesting with many small coves and low promontories. The Eyemouth Golf Course is adjacent and much good habitat has been lost over the years to agriculture and now to the fairways and greens. Fertiliser runoff onto the braes is an increasing issue. Nevertheless the botanical interest remains high. *Astragalus danicus* Purple Milk-vetch is scattered at the cliff top, there is a tiny patch of maritime heath with a fine population of *Scilla verna* Spring Squill, one slope has a magnificent colony of *Viola canina* Heath Dog-violet and wet places on the rocks harbour *Carex distans* Distant Sedge, *Schoenus nigricans* Black Bog-rush, *Seriphidium maritimum* Sea Wormwood, *Spergularia media* Greater Sea-spurrey and *Triglochin maritimum* Sea Arrowgrass. *Ligusticum scoticum* Scots Lovage is widespread. However the new harbour wall has destroyed a rich shoreline where *Primula veris* Cowslip and *Orchis mascula* Early-purple Orchid were formerly plentiful and dumping has introduced a suite of neophytes, in particular *Allium paradoxum* Few-flowered Garlic, *Crocosmia x crocosmiiflora* Montbretia and *Sedum album* White Stonecrop.

Bay at mouth of Milldown Burn 1994

Eyemouth Fort occupies a promontory on the Old Red Sandstone to the north of the town and its turbulent history has ensured the destruction of any grassland interest. However the northwest side of the promontory is andesite and at the very tip stands Hairy Ness. Here there is a tiny amphitheatre where *Puccinellia distans subsp. borealis* Northern Saltmarsh-grass is found in a largely vegetation-free area. Following the cliff northwest the slopes become less rocky and *Euphrasia tetraquetra* Eyebright and *Centaurium erythraea* Common Centaury occur. Killedraught Bay lies just to the north again and for a modest length the sea braes are very species-rich with *Carlina vulgaris* Carline Thistle, *Gymnadenia conopsea* Fragrant Orchid, *Listera ovata* Common Twayblade and other calcicoles. *Rosa rugosa* Japanese Rose has recently naturalised here, forming an unwelcome thicket behind the shore below.

There is little habitat at the top of the cliffs at Linkim Kip, but *Primula veris* Cowslip remains constant through to the foot of Fleurs Dean, where *Carlina vulgaris* Carline Thistle also flourishes. Fleurs Dean itself is much given over to scrub and its botanical interest is declining, with *Cynoglossum officinale* Hound's-tongue one of the casualties. However small open flushed areas survive for the present where *Carex pulicaris* Flea Sedge, *Dactylorhiza fuchsii* Common Spotted-orchid, *Gymnadenia conopsea* Fragrant Orchid and *Pinguicula vulgaris* Common Butterwort are found. Linkim Shore has been much botanised over the years so there is evidence that the interest of the sandy grassland behind the beach has declined. *Myosotis ramosissima* Early Forget-me-not and *Valerianella locusta* Common Cornsalad just hang on but *Vicia lathyroides* Spring Vetch was last seen in 1994 so its survival is more doubtful. There is a good show of bluebells in spring under the bracken on the slopes behind where a tiny colony of *Ceratocapnos claviculata* Climbing Corydalis was refound in 2010. Immediately to the north of Linkim Shore at Yellow Craig Head there is a complex of bays, promontories, saltmarsh and flushes of high botanical interest. Highlights are *Carex distans* Distant Sedge, *C. extensa* Long-bracted Sedge, *C. otrubae* False Fox-sedge, *Eleocharis quinqueflora* Few-flowered Spike-rush, *Glaux maritima* Sea-milkwort, *Parnassia palustris* Grass-of-Parnassus, *Pinguicula vulgaris* Common Butterwort, *Spergularia media* Greater Sea-spurrey and *Triglochin maritimum* Sea Arrowgrass. A wholly unexpected recent arrival is *Crambe maritima* Sea-kale.

Clematis vitalba **Coldingham Bay 2010**

One plant has flourished on a small beach and flowered for the first time in 2009, it was joined by a seedling nearby in 2012. Another recent arrival is *Atriplex littoralis* Grass-leaved Orache, first seen in 2006.

Coldingham Bay has a sandy beach popular with holiday makers in the summer so the disappearance of *Cakile maritima* Sea Rocket in the 1990's was attributed to them. This seems to have been a fallacy as the *Cakile* has now re-colonised in some abundance. The frequency of *Atriplex* Orache species, especially *A. laciniata* Cut-leaved Orache, is similarly variable. The modest dunes behind the beach with *Ammophila arenaria* Marram, allegedly deliberately introduced to stabilise the sand, and *Leymus arenarius* Lyme-grass are also home to a small colony of *Geranium sanguineum* Bloody Crane's-bill, better colonies of *Carex arenaria* Sand Sedge and *Thalictrum minus* Lesser Meadow-rue and a large population of *Stellaria pallida* Lesser Chickweed by the beach huts. The grass banks are no longer grazed and scrub is spreading, but *Primula veris* Cowslip is still widespread. Homeli Knowe, a fort-like feature at the foot of Milldown Burn has a few *Gymnadenia conopsea* Fragrant Orchid and many *Listera ovata* Common Twayblade with *Helianthemum nummularium* Common Rockrose, *Koeleria macrantha* Crested Hair-grass, *Primula veris* Cowslip and *Orchis mascula* Early-purple Orchid. *Astragalus danicus* Purple Milk-vetch appears to have been lost since 1996. The *Anthyllis vulneraria* Kidney Vetch here formerly supported a colony of the butterfly *Cupido minimus* Small Blue, but these died out quite recently though another colony has been discovered near Eyemouth. The Milldown Burn has a small dean with woodland species including *Phyllitis scolopendrium* Hart's-tongue Fern, which has probably increased recently. Behind the north end of the beach *Clematis vitalba* Traveller's-joy has naturalised in great abundance over bracken and other vegetation.

St Abbs from White Heugh 2006

The cliffs to the immediate south of St Abbs village suffer from dumping and *Sedum album* White Stonecrop in particular has colonised to excess, endangering a colony of *Trifolium arvense* Hare's-foot Clover, though this species is also present about the harbour. A small colony of *Daucus carota subsp. carota* Wild Carrot at the foot of the cliffs is the sole extant native population known in Berwickshire and does not seem to relate to cultivars. It has a long recorded history in this neighbourhood.

Starney Bay, to the north of the village, marks the entrance to **St Abbs Head NNR**. It has related geology to the cliffs to the south of the village and *Trifolium arvense* Hare's-foot Clover is plentiful on the cliffs. There is a little *Astragalus danicus* Purple Milk-vetch on the cliff top and the slopes below have *Agrimonia eupatoria* Agrimony, *Centaurium erythraea* Common Centaury, *Helianthemum nummularium* Common Rockrose and *Orchis mascula* Early-purple Orchid.

Stephen Warman & *Trifolium arvense* Kirk Hill 1983

Burnmouth Harbour is the name given to a small bay with a shingle beach, here *Cochlearia officinalis subsp. scotica* Scottish Scurvygrass was found in 2007 and a recent arrival is *Crambe maritima* Sea-kale.

Ligusticum scoticum Scots Lovage is plentiful on the north face of White Heugh where the geology changes to andesite. This geological fault properly marks the beginning of St Abbs Head, very much the Berwickshire Mecca of birdwatchers and botanists. The botanical interest is secondary to the sea birds and has been much modified over the centuries by settlement, cultivation, quarrying, the construction of a reservoir on the site of a mire and even a short-lived nine-hole golf course. In the circumstances it is perhaps remarkable that so much has survived with the main losses relating to maritime heath and mire communities. The key to the high survival rate is the hardness of the andesite and basalt, and their mineralogy is what favours the specialist plants of the head. While *Minuartia verna* Spring Sandwort is the most characteristic of these, with good colonies on inland cliffs at Kirk Hill and near Petticowick, the very extensive population of *Astragalus danicus* Purple Milk-vetch at the cliff edge and on the knowes with *Koeleria macrantha* Crested Hair-grass as an associate is perhaps more significant. Here they are accompanied by abundant *Armeria maritima* Thrift with *Silene uniflora* Sea Campion more restricted to the cliff edge. *Sagina subulata* Heath Pearlwort has recently been discovered on an undistinguished knowe not far from the old lighthouse and near a small colony of *Viola canina* Heath Dog-violet.

Scottish Wildlife Trust
ST ABB'S HEAD WILDLIFE RESERVE
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St Abbs Head first reserve leaflet 1977

The slopes below Kirk Hill and by Mire Loch have some notable annuals: *Anagallis arvensis* Scarlet Pimpernel, *Catapodium rigidum* Fern-grass, *Myosotis ramosissima* Early Forget-me-not, *Sherardia arvensis* Field Madder, *Torilis nodosa* Knotted Hedge-parsley, *Trifolium striatum* Knotted Clover and much *Vulpia bromoides* Squirrel-tail Fescue. Some of these annuals, the *Torilis* in particular, are threatened by the spread of *Sedum album* White Stonecrop. The coastal rocks are very inaccessible but there are further populations of *Ligusticum scoticum* Scots Lovage and a little *Catapodium marinum* Sea Fern-grass. The cliffs on the northwest side of the old lighthouse have substantial but totally inaccessible colonies of *Sedum rosea* Roseroot. At Petticowick the north end of the geological fault defining St Abbs Head is reached and Silurian rocks follow northwards. *Juncus ambiguus* Frog Rush occurs by seepage on the beach where occasional plants of *Puccinellia distans subsp. borealis* Northern Saltmarsh-grass may be found. This grass has its main colony on a sea stac in Broadhaven Bay nearby, with a little *Seriphidium maritimum* Sea Wormwood. Conversely, the main colony of the *Seriphidium* is on a boulder beach adjacent. The rocky slopes of Broadhaven Bay have good colonies of *Orchis mascula* Early-purple Orchid and *Hyacinthoides non-scripta* Bluebell, the latter being absent on the andesite. In the recesses of the bay by West in Thirle Heugh there are further colonies of *Sedum rosea* Roseroot, some plants of which may be reached with care.

Millar’s Moss Reservoir 2010

Inland from West in Thirle there are a series of rocky knowes across to Millar’s Moss Reservoir. Most of the **inland grassland** here is fertilised and the botanical interest has suffered accordingly. *Stellaria pallida* Lesser Chickweed remains frequent on the tops and *Cerastium arvense* Field Mouse-ear is quite widespread on the lower slopes. *Filago minima* Small Cudweed and *Geranium pusillum* Small-flowered Crane's-bill are not faring well and *Filago vulgaris* Common Cudweed has not been seen since 1983. Elsewhere inland grassland is rare. There are fragments of species-rich grassland on knowes by the Eye Water above the Victoria Jubilee Bridge near Ayton. Here *Carex muricata subsp. lamprocarpa* Prickly Sedge just survives with *Koeleria macrantha* Crested Hair-grass but *Dianthus deltoides* Maiden Pink appears to have been lost. *Malva neglecta* Dwarf Mallow occurs here in two places and also in a number of other localities near the coast as an archaeophyte. It is often associated with *M. moschata* Musk Mallow and *M. sylvestris* Common Mallow. In better condition is the grassland on rocks and a steep slope at Chester Hill near

Mouth of Eye Water Eyemouth 2010

Burnmouth. Here a calcareous community occurs, not dissimilar to that on the sea braes below, with plentiful *Primula veris* Cowslip and *Orchis mascula* Early-purple Orchid and an unexpected colony of *Arabis hirsuta* Hairy Rock-cress. *Viola lutea* Mountain Pansy just survives in the remains of a more acid community on the hill top.

Wetland is almost limited to the two small reservoirs at Millar's Moss and Mire Loch. The former is notable for *Potamogeton filiformis* Slender-leaved Pondweed which has its headquarters in the nearby Coldingham Loch. There is also *Ranunculus peltatus* Pond Water-crowfoot, *Zannichellia palustris* Horned Pondweed and the charophyte *Chara globularis/virgata* aggregate but the *Ranunculus baudotii* Brackish Water-crowfoot recorded in 1954 has never been found again and may have been casual. However *Littorella uniflora* Shoreweed has disappeared since 1994 so the water chemistry may have been changing. Mire Loch is much used by Kittiwakes for bathing and is not very species-rich, though the adjacent flushes have much *Dactylorhiza purpurella* Northern Marsh-orchid and *Hydrocotyle vulgaris* Marsh Pennywort. A taxon that survived the mire destruction, and may even have originated then, is *Equisetum x litorale* Shore Horsetail.

Woodland is mainly represented by the deans along the Ale and Eye Waters. Whitfield Wood by the Ale Water was formerly very wet woodland with moorland adjacent and had a specialist flora but only vestiges of these communities survive. The Ale Water has a long series of deep gorges with apparent botanical potential. The reality is rather disappointing. *Allium ursinum* Ramsons, *Phyllitis scolopendrium* Hart's-tongue Fern and *Polystichum aculeatum* Hard Shield-fern are plentiful as are *Claytonia sibirica* Pink Purslane and *Symphytum tuberosum* Tuberous Comfrey as introductions but more specialist woodland indicators like *Adoxa moschatellina* Moschatel and *Sanicula europaea* Sanicle are very scarce. Near the foot of the Ale Water the geology changes and *Geum rivale* Water Avens, *Hypericum hirsutum* Hairy St John's-wort and *Saxifraga granulata* Meadow Saxifrage appear. Just at the junction with the Eye Water there is a remarkable rock outcrop, the Kip Rock. Here *Allium vineale var. compactum* Wild Onion and *Echium vulgare* Viper's-bugloss are found. The steep banks opposite have an even more unexpected community with *Astragalus glycyphyllos* Wild Liquorice and *Thalictrum minus* Lesser Meadow-rue. While the Eye Water both above this point to Ayton and downstream to Netherbyres has many pleasant wooded banks they are much modified by plantings and by intrusive neophytes such as *Allium paradoxum* Few-flowered Garlic and *Doronicum pardalianches* Leopard's-bane. There is *Cardamine amara* Large Bitter-cress and a little *Campanula latifolia* Giant Bellflower. *Myrrhis odorata* Sweet Cicely and *Oenanthe crocata* Hemlock Water-dropwort are very frequent. *Berula erecta* Lesser Water-parsnip occurs in an old mill stream. Some of the rocky banks have colonies of *Daphne laureola* Spurge-laurel, thought to be an introduction in Berwickshire, but a well-naturalised one. The few plants of *Carex pendula* Pendulous Sedge at Netherbyres could be garden escapes as could the *Polystichum setiferum* Soft Shield-fern nearby while *Tulipa sylvestris*Wild Tulip is a well-naturalised introduction near the house. All the *Viburnum opulus* Guelder-rose, especially evident around Eyemouth, is clearly planted.

Moorland is all but extinct in the hectad away from the few coastal fragments. Nevertheless a surprising number of moorland and moorland-edge species may be found in the Feuarsmoor, Mileknowe and Drill Plantations, Longueville and Whitfield Wood. There is a little *Calluna* Heather with such species as *Achillea ptarmica* Sneezewort, *Carex disticha* Brown Sedge, *C. flacca* Glaucous Sedge, *Geum rivale* Water Avens, *Rhinanthus minor* Yellow-rattle and *Trifolium medium* Zigzag Clover. The *Rhinanthus* is a species in serious decline in Berwickshire and the colonies here are some of the best remaining in the county. The woodland rides are one of the few localities in Berwickshire where *Mentha arvensis* Corn Mint is still found, as it almost gone from arable fields.

The hectad has a relatively rich **arable weed** flora, especially in the fields adjacent to the coast, but it is now rare to see many plants of the scarcer species. *Anthriscus caucalis* Bur Parsley has prospered briefly in two fields on Northfield in recent years but *Chrysanthemum segetum* Corn Marigold had all but disappeared except in wildflower sowings until it reappeared in abundance in 2014 following the ploughing

***Chrysanthemum segetum* nr Burnmouth 2014** I Cowe

of an old headland near Burnmouth. *Stachys arvensis* Field Woundwort is occasionally met with at the headland by the coastal path and *Anagallis arvensis* Scarlet Pimpernel is persistent in one field at Burnmouth where *Borago officinalis* Borage has recently become naturalised where it had been grown as a crop. *Fumaria* species are well represented. *F. purpurea* Purple Ramping-fumitory appeared in some profusion along a headland to the north of Eyemouth in 2000 and has been met with on disturbed ground elsewhere about the town. One plant of *F. bastardii* Tall Ramping-fumitory was seen in 2010 but *F. densiflora* Dense-flowered Fumitory has not been seen since 1981. *F. muralis subsp. boraei* Common Ramping-fumitory and *F. officinalis subsp. officinalis* Common Fumitory are widespread with *F. officinalis subsp. wirtgenii* Common Fumitory occasional. *Lamium amplexicaule* Henbit Dead-nettle, *L. confertum* Northern Dead-nettle and *L. hybridum* Cut-leaved Dead-nettle are all quite frequent.

The settlements have a variety of **ruderal habitats** with species of interest. Outside Coldingham there is a rocky knowe at Coldingham Law with *Geranium pusillum* Small-flowered Crane's-bill among the remnants of a grassland flora but there is also a colony of *Artemisia absinthium* Wormwood, notable because it could be a survival from plants cultivated for medicinal purposes by the monks of Coldingham Priory. This species is also found in St Abbs and at least until very recently at Ross, below Burnmouth. *Epilobium roseum* Pale Willowherb is present in Coldingham, St Abbs and Eyemouth while *Coronopus squamatus* Swine-cress is a speciality of the Eyemouth area, being more often found around the town than in the fields, though it used to be frequent in field gateways at Gunsgreen before the golf course development. *Hordeum murinum* Wall Barley is almost restricted to the coastal strip in Berwickshire and occurs here and there around Coldingham, St Abbs and Eyemouth. *Fumaria capreolata* White Ramping-fumitory was found at the base of a wall in Eyemouth in 2010, a similar habitat to its one other Berwickshire locality at Cockburnspath. *Sagina maritima* Sea Pearlwort occurs about the harbours of St Abbs, Burnmouth and Eyemouth and occasionally by roads. Eyemouth has been mentioned under a variety of habitat headings and, despite its predominately urban nature, its monad, NT9464, is the most botanically diverse in Berwickshire in terms of rare or scarce plant species with twenty-five such species present.

***Artemisia absinthum* Coldingham Law 1994**

The roadsides have the usual halophytes but have been relatively little surveyed for other plants of interest. The railway has not been surveyed, but no banks worthy of particular attention have been noted. However *Ceterach officinarum* Rustyback Fern grows on a wall close to the old Ayton station.

5. A botanical tour of Berwick upon Tweed

The liberties of Berwick upon Tweed

(Surveyed 2003)

Explanatory note

Although Berwick upon Tweed is not in Berwickshire in a political sense, it is very much part of the same geographic unit. Therefore it seems appropriate to include a section on its flora, though it must be understood that the underlying data is not included in the 'Species accounts' or 'Check-list' sections.

Overview

The liberties (or bounds) of Berwick upon Tweed are that part of England that lies north of the River Tweed. They are an area of about 2,200 hectares roughly forming a triangle with the coast to the east, the River Tweed to the south with Berwick at its mouth and the Border with Scotland cutting across at an angle. The coastal strip with its sea cliffs and the riverside are Carboniferous sandstone with a little limestone, while Haliden Hill at 163m is on the Silurian. The Whiteadder Water joins the Tweed within this area.

The farmland is mostly free draining and must have been cultivated from an early date after woodland was removed. This is not to say that wet meadows and other permanent pasture did not remain or that there were not strips of moorland by the coast and in the deans. Indeed the Bounds of Berwick were granted to England in a treaty with Scotland in 1502 on the condition that they were 'to remain uncultivated, unbuilt and uninhabited'. They remained thus until the Union of 1603 when James VI and I gave full 'Liberties' for the freemen of Berwick to plant and build as they pleased. By 1724 Daniel Defoe was able to report agricultural improvement with fine barley and turnips and around 1775 the remaining open land was enclosed and let out in small farms. By the 1790's, when J V Thompson made his pioneering botanical survey, almost all the wet areas had been drained and brought under the plough. Crucially for the flora there were still exceptions: in particular one boggy field on the farm known as The Steps of Grace on the main road north (then as now farmed with Conundrum) and a haugh (or water meadow) by the Whiteadder.

The coast has a few small sandy bays but is predominantly cliff-lined with only a beach of massive boulders, though in many places an unusual wide shelf of harder rock runs out beyond that is exposed only between high tides. This is all in contrast to the coast south towards Lindisfarne and Bamburgh, with its extensive sand-dunes and mud-flats.

As the Elizabethan walls of the town are still virtually intact much of the new development before 1800, and indeed since, has been south of the river. As a result the area to the east of the town remained as fields and is now a golf course. To the immediate west of the town lay the ruins of the old castle and parts of the Edwardian walls, which encompassed a larger area than the later ones. The broad ramparts of the walls themselves were a habitat in which Thompson found a mixture of grassland species and ruderals of waste places, which will have depended on a degree of continuing disturbance. Beyond the walls to the north and east lies a vallum and ditch which in the 1790's had muddy pools, presumably grazed by horses, cattle and sheep along with the meadows beyond. The ruins of the Castle and the steep grassy banks alongside were another of Thompson's favourite haunts, especially as a stream with its water mill ran through them and there were other wet places.

Habitats

The Castle and its environs

Thompson knew Berwick before the coming of the railway in the 1840's. The station stands on the ruins of the Castle. The reed bed to the north of the main road marks the site of a marsh from which a burn ran between the Castle and the town with an overshot water mill and grassy braes. The grassland to the northwest of the Castle walls and towards Castlehills known as 'Tommy the Miller's Field' is still outwardly much as it was except for the houses on Castle Terrace, but the weedy areas round the Castle have gone or are planted with trees, scrub has increased, fertilizer has been used on part of the fields and the water feeding the wet areas has suffered enrichment. Nevertheless this remains a varied and interesting area.

Ant hills on Castlehills to the White Walls and the railway viaduct with ice at the river's edge

Grassland plants present today include *Campanula rotundifolia* Harebell, *Ononis repens* Common Restharrow and *Thymus polytrichus* Wild Thyme but *Salvia verbenaca* Wild Clary is no longer found. It was last seen in 1938. The weedy places have *Ribes sanguineum* Flowering Currant and *Senecio squalidus* Oxford Ragwort as relatively recent introductions, but not now *Cynoglossum officinale* Hound's-tongue. *Cotoneaster horizontalis* Wall Cotoneaster grows on walls while wet places support *Epilobium hirsutum* Great Willowherb, *Iris pseudacorus* Yellow Iris and *Phragmites australis* Common Reed but no longer *Berula erecta* Lesser Water-parsnip, *Menyanthes trifoliata* Bogbean, *Parnassia palustris* Grass-of-Parnassus or *Pedicularis palustris* Marsh Lousewort. *Parnassia* was recorded here as early as the 1630's but was lost to drainage in 1843.

The Golf Course: Magdalene fields and Redpath's fields

As in Thompson's time these fields are the other main grassland area near the town. Their character has changed much more than the fields by the Castle. Drainage, re-seeding and the use of fertilizer have much impoverished the flora. *Ranunculus bulbosus* Bulbous Buttercup is still plentiful but *Primula veris* Cowslip is found no nearer than Scuddylaw Dean and *Daucus carota* Wild Carrot is only now known as an introduction near the Whiteadder Bridge. *Alchemilla glabra* Smooth Lady's-mantle and *Ranunculus hederaceus* Ivy-leaved Crowfoot have been lost to drainage.

The Town, its Walls and Ramparts

Thompson gives a long species list for the Ramparts so we know they were very different from today, with many common meadow species as well as more weedy ones, including unusual alien plants, some medicinal. At Brass Bastion there is a short length of older wall which still has the original flora intact, elsewhere fastidious tidiness has removed most of the weedy species and severely depleted the meadow species. On the vallum or 'The Ditches', on the contrary, it is the absence of grazing that has caused a decline in diversity. The walls themselves are colonised in some places with a flora that differs interestingly from that in Thompson's time. The 'wastes surrounding the town' known to Thompson have gone, but weedy places are still found elsewhere about the town, principally by the shore and along the riverside.

***Parietaria judaica* Pellitory-of-the-Wall**

Parietaria judaica Pellitory-of-the-Wall is an old introduction that has long been abundant around the walls and also occurs in the streets. It perhaps typifies the heritage of the town more than any other. *Allium vineale* Wild Onion is still on the old wall by Brass Bastion and on the vallum, but is more frequent on the sea braes and the riverside by the town. Other interesting old introductions were *Hyoscyamus niger* Henbane which became abundant for a while on ground disturbed by the construction of the railway in the 1840's and *Sisymbrium irio* London-rocket which was first recorded in 1671, soon after it had suddenly become abundant in bare areas in London after the great fire of 1666, and was still in Berwick in 1834 but has since gone.

Ferns are frequent on walls around the town today, especially *Asplenium ruta-muraria* Wall-rue, *A. trichomanes* Maidenhair Spleenwort and *Phyllitis scolopendrium* Hart's-tongue Fern, but were absent in Thompson's day due to the pollution from coal burning. Other wall plants are *Cymbalaria muralis* Ivy-leaved Toadflax, sometimes as a white-flowered form, and *Erinus alpinus* Fairy Foxglove, both are introductions.

Convolvulus arvensis Field Bindweed is an old introduction that is common weed in Berwick but most remarkable growing freely from the walls about Cumberland Bastion, as known to Thompson. *Calystegia sepium* Hedge Bindweed is a more recent introduction that is now common in rough places around the town but which was not known there in 1853. Yet more recent introductions are *Buddleja davidii* Butterfly-bush and *Hyacinthoides x massartiana* Hybrid Bluebell the Garden Bluebell.

***Allium vineale* Wild Onion at Brass Bastion**

Weeds of cultivated fields and gardens

The countryside round Berwick in the 1790's was, as today, full of arable fields mainly growing wheat and barley but were then in a rotation that included more grass leys, potatoes, beans, peas and turnips than are found today. Thompson did not find much to interest him here though he did note some of the arable weeds. In addition he listed some of the weeds from 'gardens in the town'. Despite herbicides the fields still have weedy pockets at their edges and the continued existence near the Magazine of Allotment Gardens owned by the Berwick-upon-Tweed Preservation Trust has offered an opportunity to compare Thompson's garden list with the present weeds. *Veronica persica* Common Field-speedwell, so common today, was not recorded in the area till 1829. Several species still occur which are quite uncommon in the Borders such as *Veronica agrestis* Green Field-speedwell.

The Riverside to the mouth of the Whiteadder Water

The section from the old bridge to Castlehills has trees on the banks, a rich variety of herbs by the path and a salt marsh community by the Tweed. Paintings and drawings of Thompson's time make it clear that banks below the ramparts and Tweed Street were bare with the sandstone rocks exposed, so the trees and ivy are more recent. The herbs by the path are not now cut in the summer and show something of what the ramparts could have been like.

Maritime plants include *Aster tripolium* Sea Aster, *Bolboschoenus maritimus* Sea Club-rush, *Glaux maritima* Sea-milkwort, *Triglochin maritimum* Sea Arrowgrass. Among the wetland plants are *Oenanthe crocata* Hemlock Water-dropwort, *Ranunculus sceleratus* Celery-leaved Buttercup, *Triglochin palustre* Marsh Arrowgrass. The grassland has *Allium scorodoprasum* Sand Leek, *Ballota nigra* Black Horehound, *Geranium pratense* Meadow Crane's-bill, *Knautia arvensis* Field Scabious, *Malva sylvestris* Common Mallow and *Tanacetum vulgare* Tansy. The *Ballota* is a herbal introduction that has several colonies by the riverside, but was more widespread around the town in Thompson's time. *Allium scorodoprasum* Sand Leek, likely to be another old introduction, was found by Thompson at the mouth of the Whiteadder where it still grows, but it is now also found in several places by the riverside in the town. Less welcome incomers are *Allium paradoxum* Few-flowered Garlic and *Heracleum mantegazzianum* Giant Hogweed.

The Gainslaw Circuit: The Tweed and Whiteadder Water above their junction

The tides carry upriver of the junction of the Tweed and Whiteadder. In the Tweed there is less than a kilometre of river between the Scottish Border and salt water, in the Whiteadder a kilometre and a half. Here the interesting aquatic plants of the Tweed system are fairly fully represented. Riparian species are also found in 'creeks near the mouth of the Whiteadder', as Thompson aptly described them.

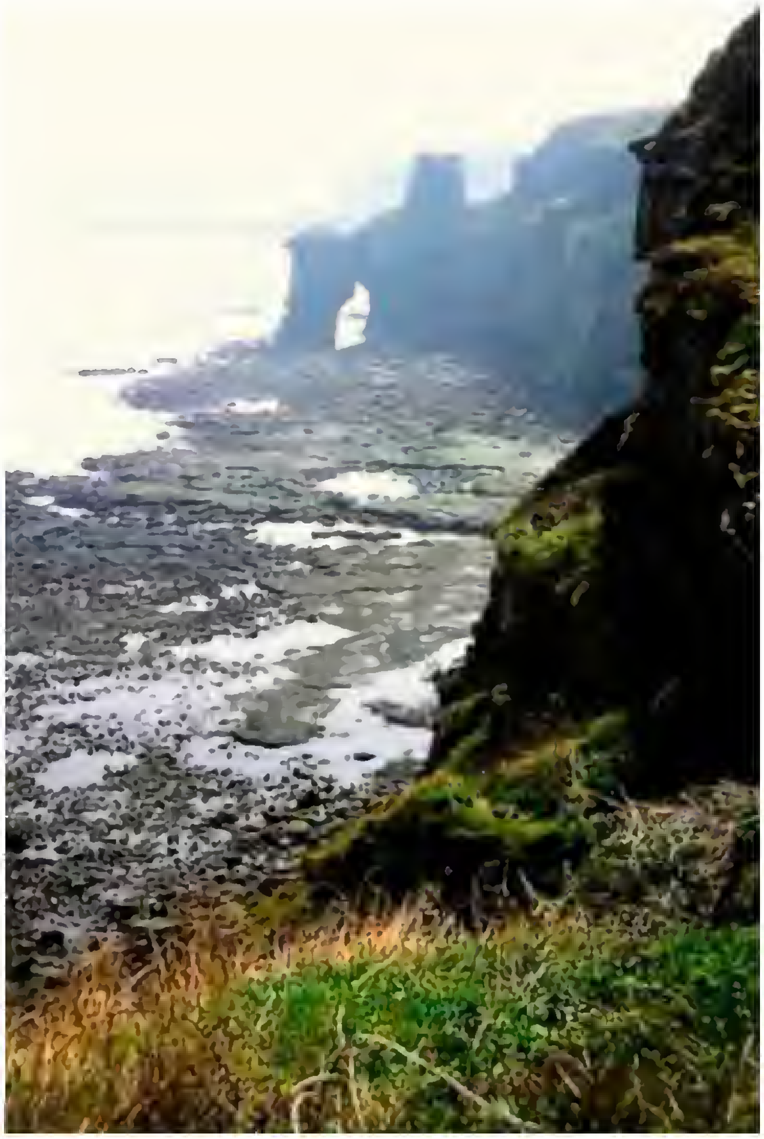
Aquatic species include *Potamogeton pectinatus* Fennel Pondweed and *P. perfoliatus* Perfoliate Pondweed with the emergent species *Butomus umbellatus* Flowering-rush and *Schoenoplectus lacustris* Common Club-rush. Notable among the wetland plants of the riverside are *Carex acuta* Slender Tufted-sedge. *C. acutiformis* Lesser Pond-sedge, *C. riparia* Greater Pond-sedge, *Glyceria maxima* Reed Sweet-grass, *Impatiens glandulifera* Indian Balsam, *Mentha x villosa* Apple Mint, *Scrophularia umbrosa* Green Figwort and *Typha latifolia* Bulrush. *Lythrum salicaria* Purple-loosestrife was known to Thompson, but is no longer present.

New Mills and the Boundary Lane

The banks beyond New Mills were known to Thompson for their grassland species though, as he also recorded blackthorn, there must have been some scrub. Today they are wholly covered by scrubby woodland. Beyond these banks the lane that marks the boundary with Scotland is little changed. *Origanum vulgare* Marjoram is found below Gainslaw and New Mills has *Veronica montana* Wood Speedwell but not the *Viola hirta* Hairy Violet which once grew there.

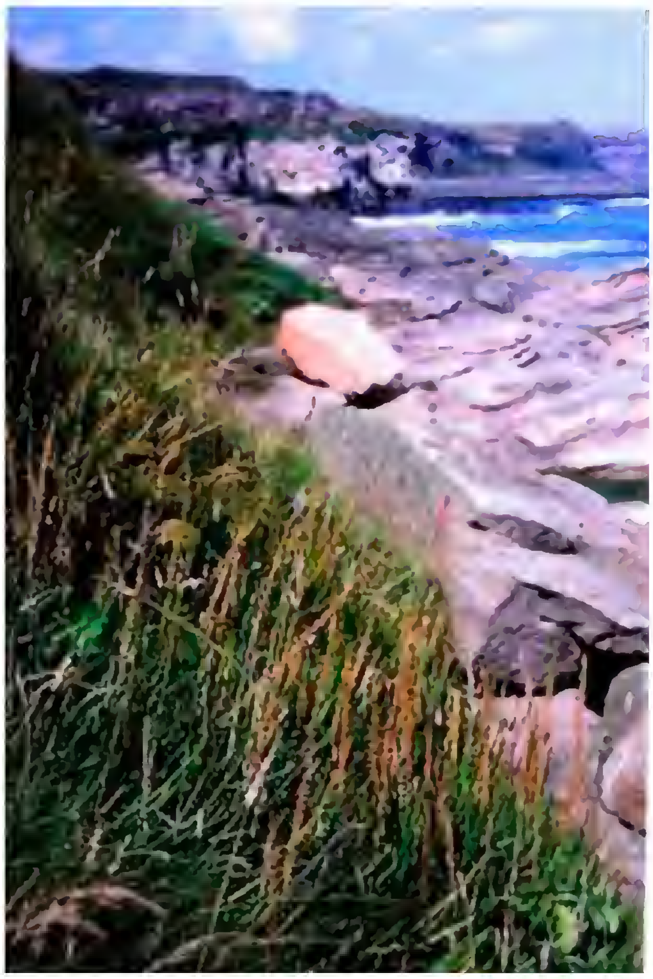
The Coast

Except for the sand at Meadow Haven, behind the pier, and at Sandybeds, a beach a little north of the Golf Course, the coast is largely dominated by sandstone cliffs of the Carboniferous period, including the spectacular arch of the Needle's Eye. Limestones outcrop mainly in the extensive rocks exposed at low tide where many fossil-bearing formations can be seen. The cliffs support few plants except where water oozes out of them, and even here the flora is not species-rich. Nevertheless this is a fine, wild stretch of coast.



The Needle's Eye and exposed rock shelf

The sand has *Ammophila arenaria* Marram, *Atriplex littoralis* Grass-leaved Orache (also known away from the sea beside the A1), *Cakile maritima* Sea Rocket and *Leymus arenarius* Lyme-grass. The cliff-top grassland has *Armeria maritima* Thrift, *Anthyllis vulneraria* Kidney Vetch, *Centaurium erythraea* Common Centaury and just a little *Koeleria macrantha* Crested Hair-grass. The undercliff is home to *Carex pendula* Pendulous Sedge, *Dactylorhiza purpurella* Northern Marsh-orchid, *Equisetum telmateia* Great Horsetail, *Eupatorium cannabinum* Hemp-agrimony, *Hyacinthoides non-scripta* Bluebell and *Vicia sylvatica* Wood Vetch. There are some splendid colonies of *Asplenium marinum* Sea Spleenwort on the sandstone sea cliffs between St John's Haven and the Needle's Eye and again a little to the south, as known to Thompson. A highlight of the 2003 survey was the re-finding of two good colonies of *Parnassia palustris* Grass-of-Parnassus between Sandybeds and the Needle's Eye, just as reported by Thompson, with *Triglochin maritimum* Sea Arrowgrass close by.



Triglochin maritimum

Coastal heath

Much of the ground inland from the coast must have once been moorland and it is fascinating to see evidence of this in small patches of heath with *Calluna vulgaris* Heather, *Empetrum nigrum* Crowberry and *Erica cinerea* Bell Heather on the cliff tops where the lie of the land has protected the vegetation from forces of change. This is seen at its most remarkable in the tangled rocks below Marshall Meadows where whole sections of the cliff have fallen leaving the heath vegetation intact on their tops.

Wetland: The Steps of Grace

Even in the 1790's little wetland remained in the vicinity of Berwick and the 'yellow-gowan meadow' mentioned in one early account had presumably been lost. The wet places near the Castle have been mentioned and there is evidence in Thompson's Catalogue of small wet areas in fields held for grazing by stock near the farms, of which the one fragment today is by the White Damhead Burn. However there was one remarkable survival in 'The boggy field west of The Steps of

Grace Farm House', which seems to have been just across the A1 from Loughend Farm Cottages. The 1769 map marks Folly Farm as Sedgeburn and indeed the field is still known today as 'Sedgden'. Here Thompson found a fine collection of wetland plants including *Schoenus nigricans* Black Bog-rush, *Selaginella selaginoides* Lesser Clubmoss but some eluded him that had been found earlier, in particular John Ray's remarkable *Tofieldia pusilla* Scottish Asphodel in 1671, or were still to be found later such as Johnston's *Epipactis palustris* Marsh Helleborine. This field was drained before 1853 and not a trace of its riches remains today. However, amazingly, a rather similar field survives just over the Border on Lamberton Moor.

Deans

A special haunt of Thompson were three small deans, Scuddylaw Dean and Folly Dean (or Logan's Folly Dean as he knew it), New (East) Farm Dean and Marshall Meadows Dean (or Balderston's Dean as he knew it: the 1769 map appears to mark Marshall Meadows as the property of B Alderston Esq. though by 1806 it belonged to George Hogarth Esq.). In his day, before the coming of the railway, Folly Dean and Marshall Meadows Dean ran through to the sea braes and had an altogether more heathy character than seems possible today, though it is far from clear how far back from the coast this character extended. The house that is now Marshall Meadows Hotel had not been built, and more importantly, the quarry in the dean, from which the fine sandstone from which the house and farm house is built, had not been opened. Today it is East Farm Dean that has the richest flora, mainly of grassland species such as *Knautia arvensis* Field Scabious though the new ponds at the head of the dean have added an aquatic flora of their own. The head of Scuddylaw Dean also has grassland species, including *Primula veris* Cowslip, while the foot has a duck pond that is part of a farm trail for visitors. Only Marshall Meadows Dean has other than scrub or newly planted woodland and now in 2003 its elms *Ulmus glabra* are affected by a resurgence of Dutch elm disease and are all to be felled to leave mainly sycamore *Acer pseudoplatanus*. Despite their modest floras these are habitats as natural as are available away from the coast and riverside and feature *Allium ursinum* Ramsons, *Saxifraga granulata* Meadow Saxifrage and *Ulmus glabra* Wych Elm. Naturalised introductions at Marshall Meadows Hotel are *Poa chaixii* Broad-leaved Meadow-grass and much *Rubus spectabilis* Salmonberry.

Policies, roads and the railway

If one is looking for change in the flora of an area one's attention can be profitably directed both to the places where recent management, such as plantings and ponds, is evident and, in contrast, to waste places that have escaped management. The justified perception that our countryside has lost its woods and wetland has led recently to much planting of trees for amenity and game and to the construction of ponds. This has led to the introduction of a great diversity of species that have become something of a headache for the plant geographer, and Berwick is no exception. Meanwhile the bustle of modern life means that there are opportunities for many a plant species to hitch a lift on our roads and railways, and the flora of Berwick's transport network has seen many interesting recent changes, especially the colonisation by salt-tolerant species along the road verges. The railway is firmly out-of-bounds to the casual naturalist, but something can be learnt of its flora from the station and by looking over the fences.

Crocosmia x crocosmiiflora Montbretia is becoming rather too well established on the sea braes. Amenity tree plantings are varied and include *Alnus incana* Grey Alder and *A. viridis* Green Alder as listed in a recent catalogue of a local tree nursery, Cheviot Trees, with *Corylus avellana* Hazel, which is absent as a native. *Prunus cerasifera* Cherry Plum is a planting which provides plentiful early blossom by the A1 trunk road. The roadsides have *Artemisia vulgaris* Mugwort, *Puccinellia distans* Reflexed Saltmarsh-grass, *Rumex longifolius* Northern Dock and *Spergularia marina* Lesser Sea-spurrey, all in some quantity.

6. The changing flora of Berwickshire

Explanatory note

This section examines a number of groups of plants where there have been changes over the years due to man's activities. It addresses the situation where a number of unrelated species have been affected in a similar way, so that neither the 'Botanical tour' nor the 'Species accounts' section offers an appropriate opportunity for discussion. The topics examined contain general discussion and short species accounts for some of the species involved: these species are highlighted in **blue bold** in the 'Check-list' section.

Some of the topics examined were the subject of articles in the journals of BSBI or the Berwickshire Naturalists' Club and these articles have been adapted for the present purpose. As a result there are considerable differences in style.

Fashions in tree and hedge planting

Although woodland habitats are discussed throughout the 'Botanical tour' section, it seems desirable to present some separate account, not least to recognise the remarkable amount of recent tree and hedge planting in Berwickshire. To give some historical perspective to present day fashions in tree planting in Berwickshire, I turn to George Henderson of Chirnside, 1800-1864 (Braithwaite 2012).

There is a ridge of land now known as Buncle Edge that runs at an altitude of about 250m between Stoneshiel Hill above the Whiteadder Water to the west and Warlawbank to the east. This ridge was predominantly moorland and rough grassland in Henderson's day (but is no longer so) and here Henderson loved to walk. He records the scene around 1850 as follows:

'It may be observed that, to a person taking a survey of these [Iron Age] encampments on a fine summer day in July, few pleasanter views can be enjoyed. On the one hand are the wide heathy hills of Lammermoor, on the other the fertile vale of the Tweed, under the highest state of cultivation; its fields enclosed by well dressed thorn hedges, intermixed with belts and groves of trees sheltering the fields and ornamenting the seats of the gentry and the numerous neat and substantial farm steadings scattered everywhere about, its fields at that season of the year clothed with luxuriant crops of corn, verdant turnip plots, blooming potatoes or rich pastures with flocks and herds feeding or reposing in them with the clean silvery streams of the Tweed, Whitadder and lesser rivulets glancing in the sunbeams & meandering through the whole of the country bounded by the Cheviot mountains on the south, the hills of Teviotdale on the southwest, the Lammermoor hills on the north, and the ocean on the east, form altogether a landscape similar to a vast extended garden and which for beauty and fertility can scarcely be equalled in any quarter of the British Islands'.

It is reassuring that Henderson had learned to see value in the agricultural improvements and could still love his native countryside, despite his deep-felt belief that much had been lost unnecessarily: that a little thought to what we would today call wildlife conservation would have made a huge difference. He wrote: 'Our marshes and ponds might have suffered curtailment but surely there was no need that *every* piece of water and *every* bog and morass should have been destroyed'. His description confirms that by 1850 the transformation of the countryside was essentially complete with smallholdings and run-rig cultivation replaced by ordered fields and farmsteads.

The vision that led to 'fields enclosed by well dressed thorn hedges, intermixed with belts and groves of trees sheltering the fields and ornamenting the seats of the gentry' is not so different to the vision that has driven the amenity plantings that have been such a feature of recent years.

Some comment on the merits and demerits of individual schemes is included in the 'Botanical tour' and there too are remarks on a few of the herbaceous species present in the commercial conifer plantations. I note here changes in the distribution of a few individual tree and shrub species that are not included in the 'Species accounts' section. Relevant trees and shrubs for which there are species accounts include *Juniper communis* Juniper, *Populus tremula* Aspen, *Prunus padus* Bird Cherry, *Quercus petraea* Sessile Oak and some of the willows, *Salix* species. A much wider variety of species is readily available for planting than in the past and it has become commonplace to see relatively exotic species in the wider countryside, rather than just in the immediate policies of mansion houses. Such species include several *Abies* Fir species, *Quercus rubra* Red Oak and *Sorbus intermedia* Swedish Whitebeam.

Acer campestre Field Maple is often included in plantings of supposedly native species and in hedging. It is almost certainly not native in Berwickshire, though it has naturalised narrowly in a few places as at Carolside 53 and Press Castle 86. It seems to have been quite popular in the nineteenth century but not again until recently. There is a fascination in trying to date the plantings in hedges and small woodlands through the mix of species planted, as fashions change.

The native birch in much of Berwickshire is *Betula pubescens* Downy Birch. However the species planted is nearly always *B. pendula* Silver Birch, so much so that the native distribution of *B. pendula* is almost wholly obscured. For many years I believed that no native *B. pendula* survived in Berwickshire, but I have recently found it difficult to ignore its populations in some of the woodlands on the Hirsel estate, particularly those around Hirsel Law 84 and at Crown Gorse 74. Most of the earlier plantings of *B. pendula* were in the policy woodlands of mansion houses where they sometimes naturalised, but more recently there has been much planting of this species throughout the county and particularly in the hills, long the preserve of *B. pubescens*.

Corylus avellana Hazel is remarkably sparse as a native in Berwickshire, though it is widespread and its native distribution extends from the sea braes to high up some of the hill burns. It was never seen in hedges until recently. However it has been included in nearly all the recent amenity tree plantings and is now much used in hedges. The stock used in these plantings often has larger nuts than the native hazel.

***Crataegus laevigata* unripe haws**

Crataegus monogyna Hawthorn has never been out of fashion as the predominant hedging species, but its suppliers have varied. Depending on the source, *C. monogyna* may be mixed to some extent with *C. laevigata* Midland Hawthorn and their hybrid, *C. x media*. Hawthorn leaves are variable and it is not an appealing task to walk along hedgerows looking for the two incomers on the basis of leaf characters, so a better strategy is needed. I have found two such strategies to be effective. *C. laevigata* and some of the hybrid plants flower a week or more earlier than *C. monogyna*, so, when the first blossom of spring is seen, it is possible to drive along the lanes looking for bushes in flower and checking to see if all or some of the flowers have two styles. If the timing is right, a good 'hit rate' can be achieved. The second strategy involves the haws in autumn. Those of *C. monogyna* usually ripen from green to brown to red, while those of *C. laevigata* and some of the hybrid bushes usually ripen from green to yellow to orange to red. Again there is just a short window of opportunity to spot the yellow or orange haws and to check them out by seeing if they indeed have two stones rather than one.

Prunus avium Wild Cherry has been so widely planted over the centuries that its native distribution is almost wholly obscured. Colonies with the best claims to be native probably include those along the scaurs of the Whiteadder Water, as at Blue Braes below Chirnsidebridge 85. Here the trees have suckered over a long period of time to form groves which ensure the survival of the colony if some of the trees are lost to erosion. Self-sown saplings are usually also present in such places, as there is open habitat for the cherry stones to seed into. There is no evidence at all of *Prunus avium* being native up the hill burns of the Lammermuirs, but it is now frequently planted there in plantings of supposedly native species.

Cherry Plums 1995

A species that is now often used in hedge plantings is *Prunus cerasifera* Cherry Plum, which is not native in Berwickshire. It flowers earlier than the native *P. spinosa* Blackthorn and is preferred as it does not have the suckering habit of blackthorn. It seldom sets much fruit, even if grown as a tree, but I have gathered fruit near Birgham 73 and my wife used them in an excellent Clafoutis. I saved some of the stones and they germinated well. Some were later planted out in a hedge at Denholm Dean, Roxburghshire NT51.

Malus sylvestris Crab Apple and the cultivated apple *M. domestica* are often found in hedges, but almost never in woodland. I once advertised for specimens in the *Berwickshire News* at apple blossom time and had an amazing response, enough to excite the curiosity of my postman. I sorted out the wild and cultivated types and followed up most of them in the field. I concluded then, and my opinion has not changed, that there are no wild Crab Apples in Berwickshire and that, although the plantings are rather randomly scattered across the county, there are concentrations on particular farms. Both species are frequent and plantings may be a mixture of the two. I surmise that there were periods when nurserymen fostered a fashion of including crabs in hedge mixtures. Self-sown trees are rare. One red-fruited apple at the back of the beach at Eyemouth 96 may have arisen from a discarded apple core. Several in scrub at Rough Haugh 84 may have derived from those planted in a nearby hedge.

Roses, *Rosa* species, in hedges have also been the subject of fashions, but their history is more complex than that of Crab Apples. They are plentiful in the hedges of the Paxton House estate 95. As it happens the history of these hedges is remarkably complete. The policies of the great mansion that is Paxton House were laid out in the grand manner by the Home family at the close of the eighteenth century with plants being purchased from many sources. In 1790 '7,000 best thorns and 1,000 sweet briars were purchased from Messrs. Archd. Dickson & son, nurserymen, Hassendean, near Hawick' (Jefferson-Davies and Snow, 2008). The nursery was at Hassendeanburn, just a stroll down the lane from where we live at Clarilaw, Roxburghshire NT51. George Thorburn (2010) has recently written a history of that nursery, founded in 1728, which was to expand to become a large business. By 1800 it had 100 employees and a Britain-wide customer base though it was not until 1907 that its successor firm, Forbes nursery, was awarded a Royal warrant. The 1815 catalogue survives and quotes 'THORNS, 1 year seedlings at 3s 0d per 1,200; SWEET BRIARS, 1 year seedlings at 5s 0d per 1,200', so the Paxton House order could have been purchased at that time for not much more than a pound. The more mature stock likely to have chosen for Paxton was a little more expensive. *Rosa rubiginosa* is not prominent among the roses in the hedges at Paxton today, so 'Sweet Briar' seems to have been a nurseryman's euphemism.

***Abies alba* Abbey St Bathans 1998**

Of the planted conifers, perhaps the species most characteristic of Berwickshire is *Abies alba* European Silver-fir. This species is a feature of almost all the mansion house policies and I enjoy the rather gaunt outline that is recognisable from afar. It is usually the tallest tree present, though *Pseudotsuga menziesii* Douglas Fir, with its characteristically drooping uppermost leader, can rival it if old trees are present. *Sequoiadendron giganteum* Wellingtonia often accompanies the *Abies* in such policies and is likely to be longer-lived and to over-top the *Abies* in due course. The *Abies* is frequently found self-sown and the saplings can progress to the canopy even in mature woodland. I have noted three generations growing together at Abbey St Bathans 76, though the parentage of the youngest generation could be disputed. Other species of *Abies* are now preferred, with *A. alba* excluded completely, due to its supposed susceptibility to disease. I say 'supposed' as I have never observed an unhealthy tree.

In contrast cedars are poorly represented in Berwickshire, with a fine old *Cedrus lebani* Cedar-of-Lebanon at Paxton House 95 being an honourable exception. *Cedrus deodara* Deodar is probably better adapted to the climate and there are impressive trees of that species at Mordington House 95.

Seed 'for growing under trees'

Recently, I made an interesting discovery in a rare nurseryman's catalogue from the first year of Queen Victoria's reign, namely 'Drummond, W. & Sons. A general list or compendium of seeds, plants, implements, etc, sold, by W. Drummond & Sons, Stirling, seedsmen and nurserymen, 15pp, Stirling 1837'. There is much to divert the reader in this catalogue, but a list of grasses and clovers 'For Herbage and Forage' has the following entry '*Poa nemoralis*, for growing under trees, 3[shillings] 0[pence] [per lb]'. This suggests an established fashion for sowing the seed of grasses and other herbs in the policy woodland of Scottish mansion houses, and sheds new light on the records of *Poa chaixii* Broad-leaved Meadow-grass and *Luzula luzuloides* White Wood-rush in Berwickshire where they are nearly always found associated with *Poa nemoralis* Wood Meadow-grass.

I have learned through Anne Ronse of the National Botanic Garden of Belgium (Ronse and Braithwaite 2012) that similar associations have been recorded widely on the continent, in Belgium, Denmark, France, Germany, Norway, Russia and Sweden. According to N Hylander, who made a comprehensive study of this species group in Swedish parks, there were two main provenances for the seeds: central and south Germany on the one hand, and south-eastern France (Dauphiné) and possibly also the adjacent westernmost part of Switzerland on the other hand.

We learn something of the circumstances in which the seed was collected from Friedrich Nobbe, a German specialist of seed mixtures called 'the father of seed testing'. He wrote in 1876 that the seed mixtures contained many impurities. He stated that the reason for this was that the collectors, who were mostly women and children, were paid by weight, and that it was only natural that they tried to increase their wage by including other seeds; though in many cases it can be assumed that they were unable to distinguish between the grasses they had been asked to collect and other species.

The species that may have been included in these seed mixtures are discussed below. The main species, as already indicated, are *Poa nemoralis, Poa chaixii* and *Luzula luzuloides.*

Poa nemoralis is a somewhat local native woodland grass in Berwickshire. It has been recorded recently from 85 monads. Of these, 28 are probably native, as they come from relatively undisturbed ancient woodland, while the remaining 57 come from mansion house policies or wall tops and are indeterminate. Many, but by no means all, of the populations in such policies are likely to be introductions. Ancient woodland was often incorporated into the policies and native *Poa nemoralis* is likely to have been present in some of this woodland.

The first Berwickshire record for *Poa nemoralis* was by Andrew Kelly in 1873 with *Poa chaixii*, also new to the county, in the policies of Blackadder House 85, where there is some ancient woodland. The two species still grow together along the old carriage drive to the house (now demolished), while *Luzula luzuloides* grows by another drive to the house.

Poa chaixii was next reported in 1902 by Adam Anderson near Duns along with *P. nemoralis* and *Luzula luzuloides.* Adam Anderson lived at Cumledge Mill near Duns and was botanically active from 1883. His *Poa chaixii* record was probably made at Duns Castle 75 where *Poa chaixii* and *Poa nemoralis* still grow by woodland rides. This record of *Luzula luzuloides* was the first for Berwickshire.

Poa chaixii has been recorded recently from twelve monads in Berwickshire, *Luzula luzuloides* from four. *Poa chaixii* and *Luzula luzuloides* are found in the shade under mature trees in fairly formal parts of mansion house policies, along drives or woodland walks, while *Poa nemoralis* may be more widespread in dry woodland, especially under beech.

Several other species seem to be associated with *Poa chaixii* and *Luzula luzuloides.*

Milium effusum Wood Millet is native in Berwickshire, but is scarce, as discussed in the 'Species accounts' section, and has clearly been introduced to three of its five sites where it is associated with *Luzula luzuloides* or *Poa chaixii.*

Carex sylvatica Wood Sedge is rather widespread as a native in Berwickshire but is especially frequent along carriage drives and woodland rides in the parkland of mansion houses where it is likely to have been sown. For this species too there is some coincidence with the stations of *Poa chaixii.*

Carex muricata subsp. *muricata* Prickly Sedge is a rare British native that was established for a short period in the 1870's at Thirlestane Castle in Berwickshire. Here there is a wooded mound by the castle well away from any native woodland where *Poa chaixii* and *Luzula luzuloides* grow accompanied by *Poa nemoralis* and *Carex sylvatica. Milium effusum* was also recorded there in 1874. There is a thus a strong case for assuming all these species to have been sown at this locality at the same time, with the *Carex muricata* likely to have been a chance impurity.

Carex divulsa subsp. *leersii* Leers' Sedge is a woodland-edge species that is likely to have arrived in the same way. It is known from three monads in Berwickshire, always in policies where there is *Poa chaixii.*

Festuca heterophylla Various-leaved Fescue is a rare introduction in Berwickshire that has only been found in the policies at Mellerstain 63. Unexpectedly, neither *Poa chaixii* nor *Luzula luzuloides* has been found there.

Certain *Hieracium* Hawkweed species that grow under trees in Berwickshire are also associated with *Poa chaixii* and *Luzula luzuloides*. These include *Hieracium grandidens* which is not native to Berwickshire. *H. grandidens* is one of the species in the association reported by Hylander.

Taking this set of species as a whole and matching it with Hylander's work, it is clear that the seed mixtures sown in the policies of Berwickshire mansion houses came from south and central Germany rather than France.

It is gratifying to have at last found the source of a group of species that has long puzzled me and to have established the probable status of the well-authenticated records for the rare *Carex muricata* subsp. *muricata* at Thirlestane Castle.

Exotic crops

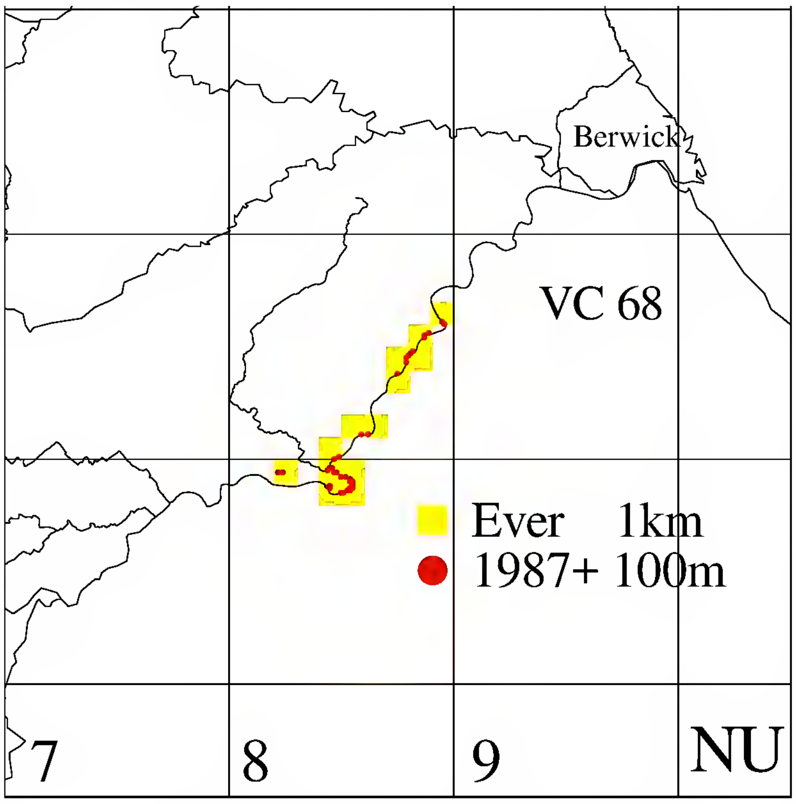
Experimental crops
In my lifetime I have witnessed an increasing diversity of crops being sown in Berwickshire's fields. The most striking innovation was *Brassica napus subsp. oleifera* Oil-seed Rape which has become one of the staple crops of the area. A more recent innovation has been the practice of growing vegetables under field-size plastic sheeting, which, in certain lighting conditions, can give the illusion of new lochs in the countryside. Other new crops have followed, many of them experimental.

One example has been *Linum usitatissimum* Flax (or Linseed) which had been grown for various purposes in the distant past and then had a brief period of popularity in Berwickshire as an oil-seed crop. More recently it has been most often seen as a game crop in a planted strip, either on its own or with other species such as *X Triticosecale rimpaui* Triticale. *Linum* was noted in 1999 near Chirnside 85 and rather widely in the following years with records from 16 monads.

Other examples are *Borago officinalis* Borage grown for oil seed and in setaside, which has been encountered quite frequently since 1999 being first noted a whole-field crop near Gordon 64 in 2000, and *Lupinus albus* White Lupin, grown for silage, which was noted twice in 2002 at Grizzlefield 53 and Berryhll 86 but not again.

Crambe hispanica in fruit Coldstream 2006

Altogether more remarkable is the story of *Crambe hispanica* Oil-seed Crambe. It is an annual that was grown in Berwickshire as an oil-seed crop in two fields only near Coldstream 83, and only in 2005. Seed escaped from one of these, at Lees Haugh 83 in a huge autumn flood and grew the next year in the deposits of alluvium left on the banks of the River Tweed. By 2007 the alluvium patches had vegetated over and very few plants of the *Crambe* appeared although plenty of seed had been ripened in 2006. I surveyed this event in great detail in 2006 and 2007. It demonstrated just what may happen when seed is released into a river system. Plants were only found for about 10km downstream of the escape and most were found within 2km. This ties in very neatly with Miss I M Hayward's observations by the River Tweed in Roxburghshire and Selkirkshire on Galashiels wool aliens 1908-1915, though most of her plants were found on river shingle, not on flood plain alluvium.



***Crambe hispanica* 2006, 2007**

Setaside and game crops

Another innovation has been setaside, introduced in 1988 at a time of agricultural over-supply in the European Union and continued in various forms under the banner of wildlife conservation.

Initially setaside was just that, land set aside as fallow, and it was of interest to botanists as it gave an opportunity for a number of scarce arable weeds to re-establish themselves in small quantity. More recently setaside strips have been replaced by strips sown with relatively exotic seed mixtures formulated to provide winter feed for birds, not least the pheasants put down by increasingly commercial shooting syndicates. Field botanists, who had traditionally ignored crops in favour of wild plants, found themselves unable to ignore these developments, as species sown deliberately in one year persisted to a degree in subsequent years as an element in the weed flora. So the fashion changed and field botanists now record crops, recognising them as part of the living landscape where they make positive as well as negative contributions to the web of wildlife.

A consequence of the uneven history of botanical recording is an ambivalent historical record. It is not always clear whether gaps in the recorded history of a species reflect absence or recording bias. With this caveat, a short account is presented of some of the more prominent recent introductions from a botanical perspective. The monad frequencies quoted relate, of course, to just a very modest sample survey of relevant sowings.

Chenopodium quinoa Quinoa is a striking plant when it turns shades of orange and red in the autumn. It is sometimes known as Grain of the Incas. It is like a giant version of *Chenopodium album* Fat-hen and it had me very puzzled when I first came across it in 1990 at Nisbet Hill 75. It was not met with again until 2000 at Huntshaw 54. It has now been found in game strips in 16 monads, more often grown mixed with other species than as a pure stand.

Cichorium intybus Chicory was first recorded in Berwickshire as early as 1829 but it had not been seen recently until 2011 when it was found at Harrietsfield 73 as a residue from a planting in the previous year. In just three years it was noted in ten monads. Pink-flowered forms sometimes accompany the normal blue-flowered form. It is usually planted on its own, sometimes as a field crop. It is a short-lived perennial and sowings may be left for several years.

Chenopodium quinoa

Helianthus annuus Sunflower has only been noted twice as a crop in Berwickshire, in 2007 at Hutton 95 and in 2009 at The Hirsel 84. It has been noted much more frequently as a casual on walls, in eight monads. I first met one on a wall in 1997 at Lauder 54 and was puzzled, but thought it something of a one-off. Then in 2012 I met with it thrice: first in Lauder close to the site of the 1997 record, then in Chirnside 85, then on the wall of our own home in Roxburghshire NT51, in a chink where *Phyllitis scolopendrium* Hart's-tongue Fern used to grow before we removed it. It was the one at home that really set me thinking. We do not grow Sunflowers but we do feed their seed to the birds. We have often noticed *Parus ater* Coal Tit making off with a seed and coming back for another a minute or two later. The guide books confirm that this caching of food is a standard gambit for Coal Tits and that walls are one of the habitats used for their caches. So something clicked in my mind and I became as certain as one can be without direct observation that these puzzling self-sown Sunflowers have had a little help from their avian predators. Indeed research was published in 2007 in the staff home pages of Newcastle University by L H Male and T V Smulders to indicate that Coal Tits have much weaker memories than *Garrulus glandarius* Jay and only recover a proportion of their caches, so it all fits.

Melilotus albus White Melilot, four monads, and *Melilotus officinalis* Ribbed Melilot, six monads, are occasionally included in game crop mixtures and were both first met with in 2006 at Broomdykes 85.

Panicum miliaceum Common Millet has once been met with in a game strip, in 2010 near Blackburn 76. It was found in small quantity only, so it could have been residue from a sowing in the previous year.

Persicaria pensylvanica Pinkweed first turned up in Berwickshire in 2003 as a curiosity at Old Cambus Quarry 87, amongst residue from the turnip factory there. It is now known from six monads, sometimes clearly introduced as part of a seed mixture for its large and plentiful seed, as in 2009 at Hirsel Law 84. Sometimes it is only a casual, but probably evidencing its use in a game strip in the recent past.

Phacelia tanacetifolia Phacelia was a particularly striking innovation when first seen. It is sometimes grown to be ploughed in as green manure. The first Berwickshire record was as a crop in 2001 at Nether Huntlywood 64. More recently it has been found in game mixtures and sometimes in deliberate sowings of colourful arable weeds like poppies and cornflowers. The *Phacelia* flowers are rich in nectar and are very attractive to bees and hoverflies. It is known from 12 monads.

Phalaris arundinacea Reed Canary-grass is a very widespread native species now being sown as long-lasting game cover. It has been noted as such in nine monads since 2008, often in upland situations as near Trottingshaws 65 and Whitchester 75. It is sometimes mixed with *Cichorium intybus* Chicory, as in 2011 near Birgham 73. *Phalaris* is a species already on the increase beside watercourses in response to eutrophication where it has become unduly dominant further upstream than in the past, as along the Leader Water. The introduction of this species in upland situations could lead to its increase by upland burns with adverse consequences for the existing flora.

***Phacelia tanacetifolia* with *Galeopsis speciosa* Nether Huntlywood**

Secale cereale Rye was noted as a crop in 1853 and again in 1980 at Craighouse 63. More recently it has been found in game strips either on its own or as a component in mixtures, often with *Linum usitatissimum* Flax. It has been met with in five monads.

Sinapis alba White Mustard is occasionally grown as a commercial crop but is now more frequent as a component of conservation sowings in game strips. Its seeds persist in the soil to a much greater extent than the other game crop species discussed here and it may appear as a field weed when old grass is ploughed. It is sometimes a weed in turnips when introduced as a seed impurity. It was noted in 1958 at Georgefield 84, in 1970 as a crop at Simprim 84 and more frequently since 1995, sometimes with *Linum usitatissimum* Flax. It is known from 18 monads.

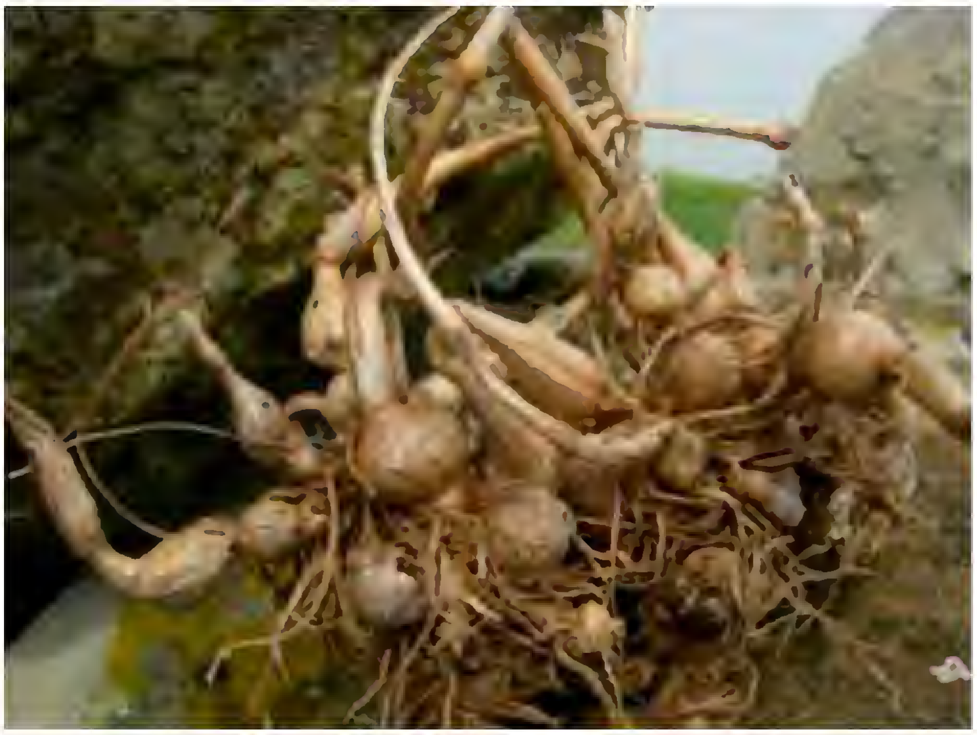
X Triticosecale rimpaui Triticale is a cross between wheat and rye that was meant to show promise as a field crop for bread. However, at least in Berwickshire, it is currently used almost exclusively in game strips, either on its own or with *Linum usitatissimum* Flax. It was first recorded in 2004 at Birkenside 54 but was doubtless overlooked previously. It has been recorded from 13 monads, much more frequently than *Secale cereale* Rye.

Zea mays Maize was first noted as a crop in 1998 at Kelloe Mains 85 and subsequently in five other monads. At Fishwick Mains 94 it has been turned into a commercial recreation feature by cutting paths to form a maze, creating the 'Amazing Maize Maze' for family fun.

Exotic weeds

Arable weeds

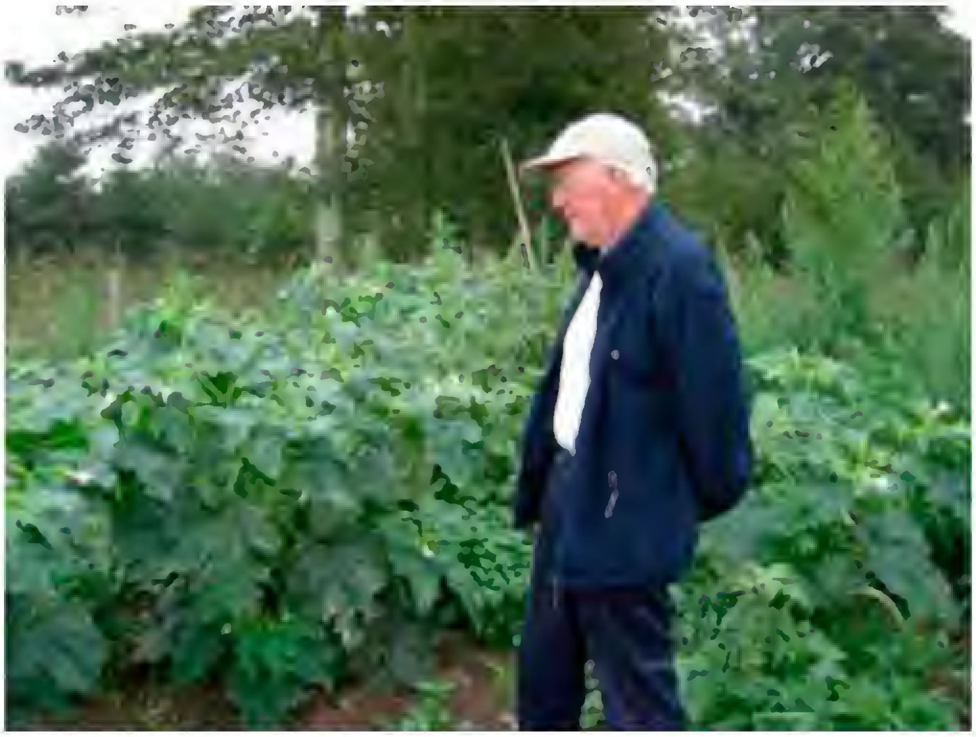
Many arable weeds are archaeophytes and much has been made of the decline of such species as the Poppies *Papaver* species. This is a rather biased approach to a habitat whose management and soil chemistry has moved on with advances in farming making a change in the species-mix inevitable. Twenty years ago it did indeed seem as if farmers had won their war against weeds, but today it seems more likely that further battles lie ahead as the weed flora adapts. Just now the best flowerings of arable weeds are in game strips and conservation headlands but new species are colonising cereal crops, mainly grasses that closely match the life-cycle of the host crop. One such example is *Anisantha diandra* Great Brome which often out-tops the crop. It is included in the 'Species accounts' section. The smaller *A. sterilis* Barren Brome is an archaeophyte which has much increased in recent years. The same can be said for *Avena fatua* Wild-oat. A grass with a different strategy is *Arrhenatherum elatius var. bulbosum* Onion-couch Oat-grass, known from six monads but doubtless much overlooked. The onion-like growths at the base of the stem detach to act as propagules. But recent incomers are not all grasses, *Amsinkia micrantha* Common Fiddleneck has been quietly colonising arable fields since 1983. It is also included in the 'Species accounts' section.



Arrhenatherum elatius var. bulbosum

Soya bean weeds

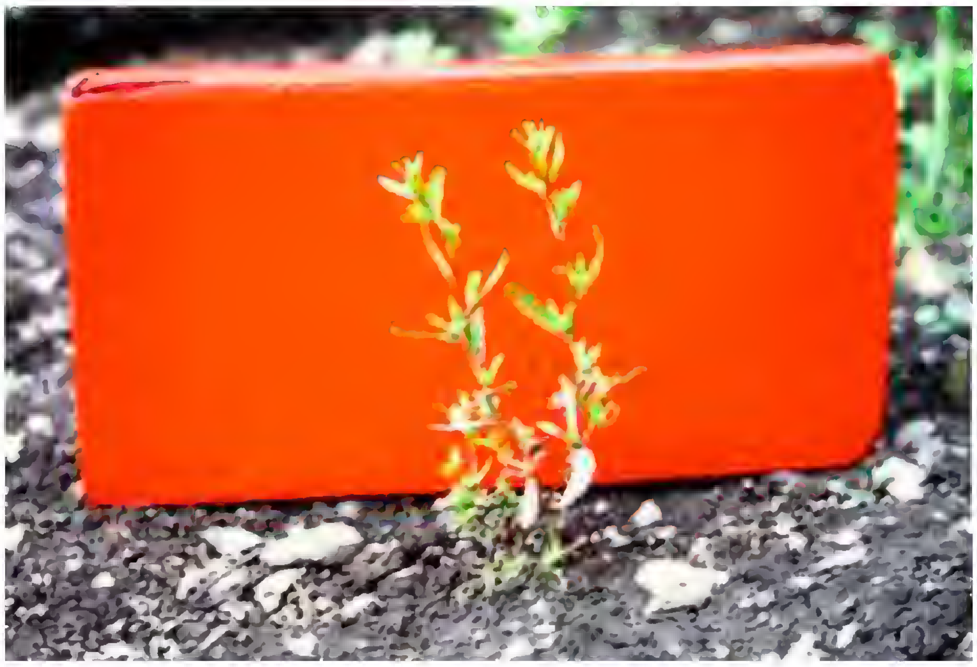
Duncan Gill alerted me in 2006 to some remarkable weeds in a potato crop in a field next to the church at Hutton 95. The farmer had had some manure from his neighbour who had been feeding Soya Bean hull *Glycine max* to his cattle. The Soya is thought to have been grown in America. It was *Datura stramonium* Thorn-apple that had caught Duncan's eye. There were over 300 plants. When Luke Gaskell and I visited the field we found a number of other unusual weeds. There were about 60 plants of *Solanum nigrum* Black Nightshade, 200 of *Amaranthus retroflexus* Common Amaranth, and four of *Persicaria pensylvanica* Pinkweed. The grasses included 100 plants of *Echinochloa crusgalli* Cockspur, 30 of *Setaria verticillata* Rough Bristle-grass, ten of *S. italica* Foxtail Bristle-grass and two of *S. pumila* Yellow Bristle-grass. Most of the *Chenopodium* plants were *C. album*, though some were unusually large, but we found two plants of *C. polyspermum* Many-seeded Goosefoot and one late-flowering plant of *C. probstii* Probst's Goosefoot.


Duncan Gill *Datura stramonium* and *Chenopodium*

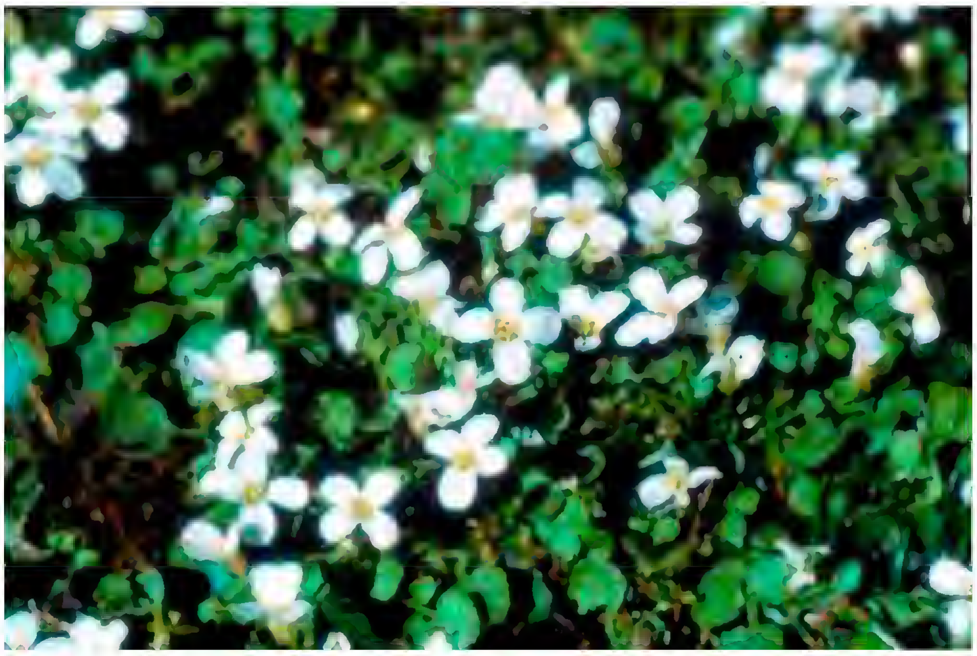
I did not handle the Thorn-apples but I did pick a couple of specimens of the Black Nightshade with contrasting leaf shapes. Within a minute I felt a tingling at the tips of my fingers and thought I had better wash them in a puddle. The next day I laid out the specimens for pressing and had the same sensation again even though I had only handled the specimens very lightly. The tingling took about two hours to wear off: all a bit much for my liking. However there were no reports of illness in the cattle to which the Soya had been fed.

Horticultural weeds

Despite its best endeavours, the horticultural trade has been responsible for the introduction of some specialist weeds. Some of the all-too-familiar species are included in the 'species accounts' section, including the bindweeds, *Calystegia* and *Convolvulus* species.


***Veronica peregrina* Clarilaw, Roxburghshire**

One of the less-recent introductions is *Veronica peregrina* American Speedwell. In Berwickshire it is only known from the walled garden at Newton Don 73 where it has been known since 1873. It is accompanied by *V. polita* Grey Field-speedwell, which is discussed in the 'Species accounts' section. *V. peregrina* is rather more frequent around Hawick, Roxburghshire NT51 where it is found in old gardens, including the garden on our own old farmhouse at Clarilaw, in churchyards and rarely as a street weed. It likes gravel paths and the foot of sun-baked walls or gravestones and is very persistent despite seldom being found in any quantity.



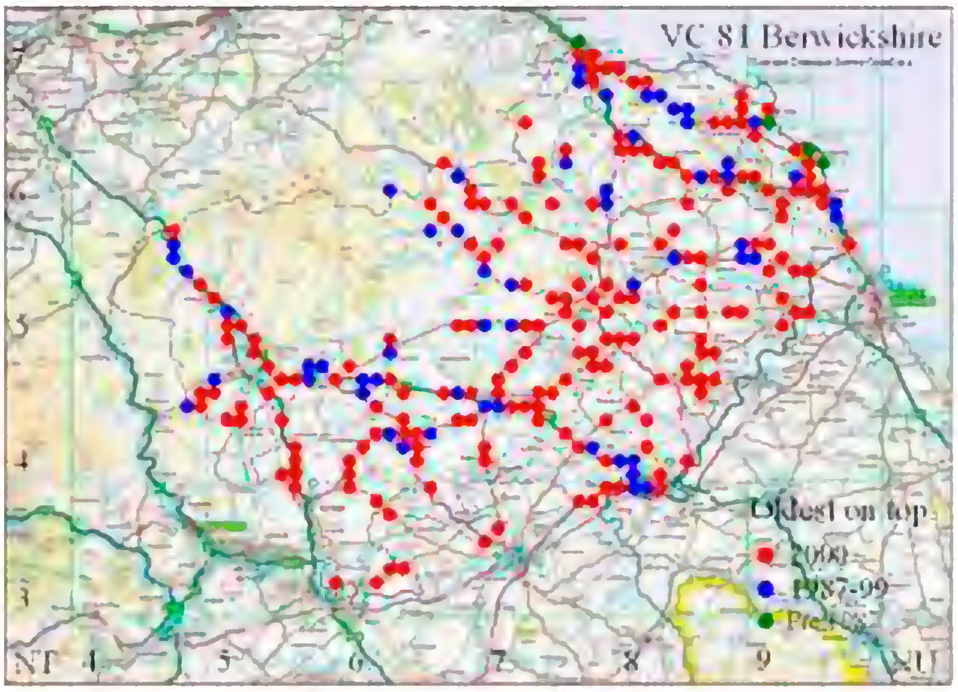
Cardamine corymbosa 7 May 1994 Colislinn Hawick

Cardamine corymbosa New Zealand Bitter-cress is a much more recent introduction that has been passed round inadvertently by rock-gardening enthusiasts. It was reported from Silverwells 86 in 1991 where it has been present for about three years and had become a bad weed of the plant nursery. It has also been found in a garden in Reston 86 and the plant nursery at Lamberton 95. It is a weed of the Berwick garden centre, North Northumberland NT95 and of our own garden in Roxburghshire NT51. It first flowers in the spring at much the same time as *C. hirsuta* Hairy Bitter-cress. Several of its few-flowered corymbs arise more or less directly from the basal rosette and, though only one of the flowers in a corymb is open at any time, the flowers open wide and may form an attractive low-growing white carpet over gravel or amongst the cobbles in a courtyard. It continues to flower through the season but this is not obvious, as only the fruiting stems catch the eye and these are much taller than those from the spring flowering and easily mistaken for those of *C. hirsuta*. The second flowering is not obvious because the flowers are cleistogamous with tiny reduced petals within sepals that do not open. It has not proved nearly as bad a weed as expected in our own garden. It has retreated to poor stony ground under a wall which is used as a herb garden and even there is much less plentiful than when it originally colonised, despite being relatively unmolested. Unlike *C. hirsuta* it does not come up cleanly when weeded. It favours stony soil, preferably with large stones under which its roots find moisture in hot weather. These characters lead to its propensity for the sand and grit-rich soil topped with coarser grit that is used by rock-gardening enthusiasts in their plant pots.

Poa imbecilla subsp. breviglumis New Zealand Meadow-grass was inadvertently introduced to the plant nursery at Lamberton 95 from the Royal Botanic Garden Edinburgh by 2002. It is rather like a poor form of *Poa annua* Annual Meadow-grass but with a more wiry upright habit. Its habitat requirements are similar to those of *Cardamine corymbosa*.

Maritime plants of inland roadsides

The colonisation of inland roadsides that are salted in winter by maritime plants is a phenomenon that has become familiar, particularly as a result of the mass flowering of *Cochlearia danica* Danish Scurvygrass along motorways. It is a recent event, much more recent than the practice of spreading salt on roads. Curiously, the colonisation of Berwickshire's roads has been from the south for all the species involved. The only species to have colonised roadsides from the north has been *Rumex longifolius* Northern Dock, but the spread of that species shows no sign of links with road-salting.



The first indication that an invasion was underway came in 1992 on a hill section of the A697 near Addiston 55 where a colony of *Spergularia marina* Lesser Sea-spurrey was found at the edge of the tarmac. This led to a phase of somewhat obsessive recording of roadsides that has allowed the colonisation to be chronicled in reasonable detail.

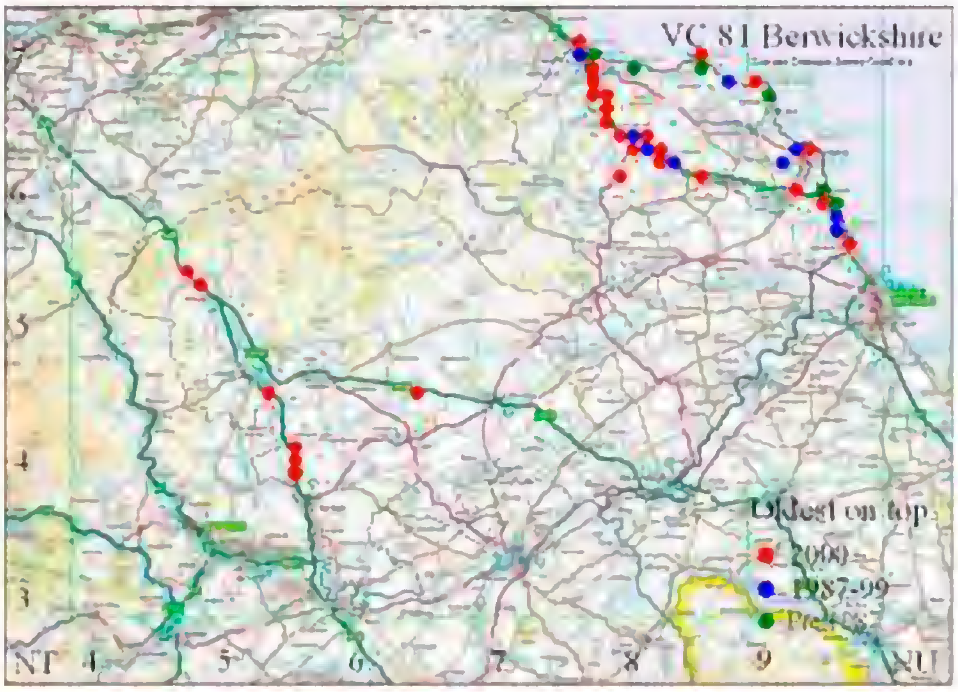
Spergularia marina, as mapped, remains the most frequent species. Predictably it first colonised the main trunk roads but it has since colonised minor roads to a surprising extent. It occupies a narrow band where the verge at the edge of the tarmac has been scorched by salt suppressing many potential competitors, especially grasses. The presence of a kerb inhibits its growth as it shields the verge from some of the salt, and facilitates the drainage of salty water. Shady and eutrophic verges are also shunned. It turns yellowish as it ages and can be conspicuous from the car.

Puccinellia distans Reflexed Saltmarsh-grass is now almost as widely distributed as *Spergularia marina*. It was first noted in 1992 by the A1 near the coast but, unlike the *Spergularia*, it did not colonise inland until 1996. It generally colonised a particular stretch of road a couple of years after the *Spergularia*. It too can be very noticeable from the car as the flowering stems age, leaving a continuous comb-like strip at the edge of the carriageway.

Only a little less widespread is *Atriplex prostrata* Spear-leaved Orache. Before its recent spread it was scarce in Berwickshire, being found most typically along roadsides near the beach in the seaside town of Eyemouth 96. On the beach itself it was more or less replaced by *Atriplex glabriuscula* Babington's Orache. This is quite unlike the situation in much of England where *Atriplex prostrata* has always been as frequent inland as near the sea. The colonisation of Berwickshire's roads began in 1993.

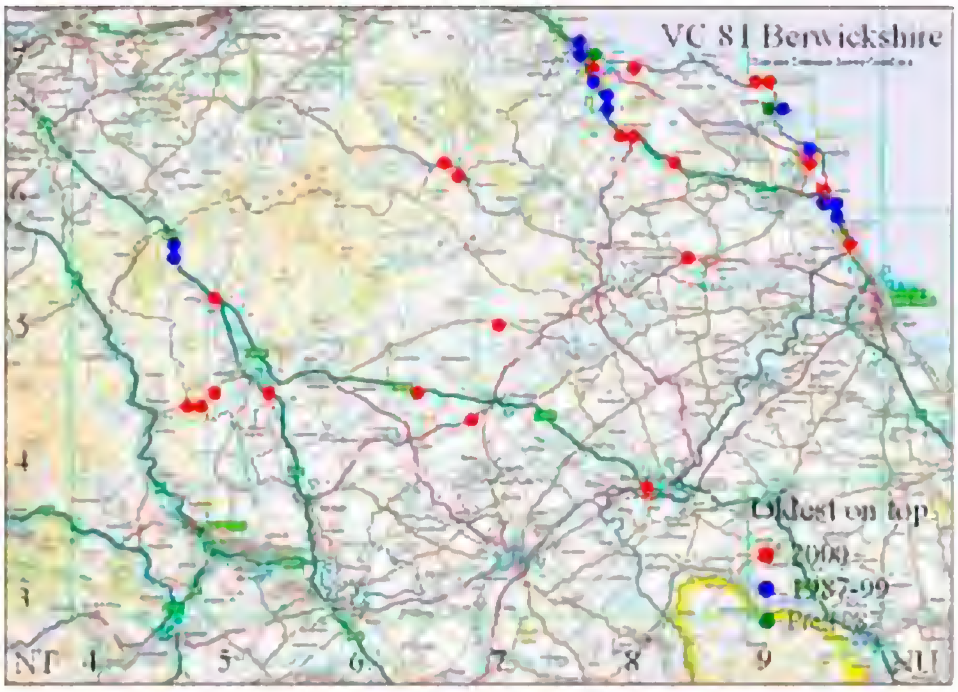
***Spergularia marina* and *Puccinellia distans* A7 Groundistone Roxburghs**

In contrast *Atriplex littoralis* Grass-leaved Orache has not colonised widely. It was first found by a roadside in 1998 near Nisbet Hill 75 but has died out there. It is now known from 19 monads, but often in small numbers.



Cochlearia danica Danish Scurvygrass has been much slower to colonise the roads of Berwickshire, despite its early colonisation of motorways in England. While it was found as early as 1993 by the A1 near the coast, it colonised that trunk road only slowly and did not appear by the A68 in the west until 2007, where it is still infrequent. It colonised north up the A1 to Edinburgh and then south down the A68 and the A7 back to the Scottish Borders. As a native species, it is uncommon on the coast and some of its localities have only been discovered recently, accounting for two prominent red 'dots' on the coast in the distribution map.

Sagina maritima Sea Pearlwort was first found inland in 1996 by the A68 near Soutra 45 and then by the A1 in the east in the following year. It is interesting that, away from the A1 in the east, it has colonised upland roadsides preferentially, as shown in the distribution map. Seemingly it is intolerant of eutrophication and prefers fine gravel as a substrate. These characteristics are shared with *Juncus ambiguus* Frog Rush, which is discussed more fully in the 'Species accounts' section.



Armeria maritima Thrift is discussed in the 'Species accounts' section. It has been found by the A1 in modest quantity from 2005. It has larger seeds than the other species to have colonised roadsides and this character is probably the limiting factor in its dispersal.

A few species that are not maritime specialists have colonised roadsides alongside the maritime species. The most prominent ones are *Elytrigia repens* Common Couch and *Potentilla anserina* Silverweed. The *Elytrigia* is often in a somewhat glaucous dwarf form but it does not correspond with the maritime *subsp. arenosa.* The very widespread *Atriplex patula* Common Orache has always been common on roadsides. It is sometimes found with *A. prostrata* and also on eutrophic verges in the absence of *A. prostrata*.

The maritime species are not having it all their own way. The edge of the tarmac along some of the trunk roads is now sprayed with herbicides in the summer, suppressing the maritime species, though a few plants of most of the species can still be found in nearly all sections of these roads. There have also been programmes to insert kerbs at the edge of the carriageway, which also restricts the maritime species.

Former medicinal plants

Distribution maps and commentary on a number of herbs that were formerly used medicinally are included in the 'Species accounts' section. These are *Ballota nigra* Black Horehound, sometimes used as an infusion, *Conium maculatum* Hemlock, used as a poultice and as a poison, *Echium vulgare* Viper's Bugloss, used as an aphrodisiac and with its roots used as a red dye, *Hyoscyamus niger* Henbane, used as an anaesthetic and for the hallucinations it can induce, *Hypericum perforatum* Perforate St John's-wort, used in the healing of wounds, *Lactuca virosa* Great Lettuce, used as a sedative, *Malva sylvestris* Common Mallow, used as a poultice on wounds, and *Reseda luteola* Weld, used as a yellow dye.

***Hyoscyamus niger* Henbane at Dalcove**

Hyoscyamus is a rarity, currently known only on eroding braes at Dalcove 63 where it was reported in 1831. It is thought to have been cultivated nearby in mediaeval times. The other species are all distributed along the River Tweed, often on sandstone cliffs or eroding banks where they are usually accompanied by *Dipsacus fullonum* Teasel. I would argue that the *Dipsacus* gives us a clue to the origins of the other species. It is not a medicinal plant but we do know its history. It was not recorded by the Tweed until 1893 and, as the earlier nineteenth-century botanists could hardly have missed such a prominent species, this makes it a recent colonist of that habitat. So how did it get there? First there needs to have been a source and, while George Johnston writing in 1853 records having once seen a small field planted with Teasel near Melrose, Roxburghshire NT53, that is likely to have been *Dipsacus sativus* Fuller's Teasel grown for use in the tweed mills, so garden plants grown for ornament seem a more likely source. Then there needs to be a distribution route. *Dipsacus* is adapted for the distribution of its spiny fruits by animals but there is no reason why the river should not also play a part. An essential element is the availability of landing stages and these are not lacking. The sandstone rock exposures by the Tweed reach right down to the river so the habitat is right there where seeds might be washed up in a flood. Once a plant is established on the rocks it will colonise upwards over time.

Dalcove, eroding bank above a former island in the Tweed

The Tweed's river banks and gravels have long been known as habitats for a range of aliens, both archaeophyte and neophyte, including herbal and cottage garden plants like *Chenopodium bonus-henricus* Good-King-Henry, *Hesperis matronalis* Dame's Violet, *Myrrhis odorata* Sweet Cicely and, I would argue, *Symphytum tuberosum* Tuberous Comfrey. But what about the sandstone outcrops? Could it be that there was a small group of plants that had been cultivated as herbal plants had naturalised down the Tweed in this specialised habitat? I believe so. But, you may ask, surely some of them are native species? *Echium vulgare* is almost certainly native on the Northumberland coast, but not necessarily so up the River Tweed. *Conium maculatum* likewise might be native near the coast, but inland it is strongly associated with old buildings and, at least until recently, the Tweedside colonies were much the most extensive ones away from the coast. I have observed it with some surprise on the ruins of Overton Tower, at 250m above Camptown near Jedburgh, Roxburghshire NT61 and it grows by an old byre at our own home at Clarilaw NT51, which much predates the Victorian farmhouse. *Hypericum perforatum* is not necessarily native inland in the Scottish Borders, but its present distribution, and that of the hybrid *H. x desetangsii,* may owe more to the coming of the railways than to herbalists, for they spread freely along the ballast and seed would have reached the river from the railway bridges. I had always imagined *Lactuca virosa* to be native in Berwickshire as its habitat on the cliffs is so very distinctive, but, after learning of its herbal uses, I have changed my mind. If you still consider one or two of these former medicinal plants to be native, even inland in the hill-girdled Tweed Valley, I won't hold it against you, as we will never all come to agree on the subject of status.

Coastal casuals

Due to the rocky nature of Berwickshire's coast there are few sandy beaches in the county and only tiny fragments of saltmarsh. As a result a number of coastal species that are frequent in North Northumberland and East Lothian are absent from Berwickshire, or almost so. Even those that have a more permanent presence often fluctuate dramatically in numbers, such as *Cakile maritima* Sea Rocket. Some of the species occur infrequently as casuals, either as single plants or as short-lived colonies. These are summarised below:

Included in the 'Species accounts' section: *Aster tripolium* Sea Aster, *Atriplex x taschereaui* Taschereau's Orache, *Beta vulgaris subsp. maritima* Sea Beet, *Crambe maritima* Sea-kale, *Suaeda maritima* Annual Sea-blite. *Crambe maritima* has recently colonised two sites and, if it persists, may soon qualify as a native species that has re-colonised naturally. *Trifolium fragiferum* Strawberry Clover is extinct inland and has declined so much on the coast that it may now be best treated as a coastal casual.

***Crambe maritima* Sea-kale** 11 June 2009 Roger Manning

Not included in 'Species accounts' section (as no recent records): *Parapholis strigosa* Hard-grass, *Salsola kali subsp. kali* Prickly Saltwort.

Included in the 'Table of extinct species', as it was apparently formerly present for an extended period at more than one locality and not currently present in adjacent counties: *Mertensia maritima* Oysterplant.

7. Species accounts

Explanatory Notes

Species selection

The 415 species selected for this section include most of those refered to in the 'Botanical tour' section. They comprise those that are **rare or scarce** in Berwickshire together with those **axiophytes** (divided into **selected axiophytes** and **other axiophytes**) and **intrusive neophytes** selected for the site descriptions in the Berwickshire BSBI Site Register 2013 and a few other notable native, archaeophyte and prominent neophyte species. An additional 25 hybrids and other segregates are mentioned under a related species.

- 'Rare or scarce' species are as defined in the Berwickshire Rare Plant Register 2004 (CRPR). Subspecies are distinguished but not varieties. Hybrids are only included where they disperse vegetatively to such an extent that they behave much as species do. All nationally rare or scarce species are included together with locally rare or scarce species, defined as occurring in ten or fewer sites in Berwickshire or likely to decline to that frequency in the near future
- Some rare or scarce species are now known from many more sites than when they were classified as such in the CRPR 2004. *Euphrasia micrantha* Eyebright is one of these, as it has recently become abundant alongside some forestry tracks. As most of the dramatic increases relate to artificial habitats, no revisions to status have been made
- Microspecies of the genera *Hieracium* Hawkweed, *Rubus* Bramble and *Taraxacum* Dandelion are excluded. The site descriptions in the 'Botanical tour' section mention some of the sites that are rich in *Hieracia* and there is summary of the *Hieracia* in the 'Critical genera' section
- All charophytes (stoneworts) present in Berwickshire qualify as rare or scarce. They are summarised in a separate section
- 'Axiophytes' are those species that are good indicators of individual habitats of conservation concern, rather than generalists present in a variety of habitats. Very widespread species such as *Calluna vulgaris* Heather are excluded
- 'Selected axiophytes' are those axiophytes that the author and fellow botanists have recorded mainly at 100m scale rather than 1km scale because they seem to us to be notable for various reasons, usually because they are relatively scarce both in Berwickshire and nationally. These include the species treated in full in the CRPR but classified there as 'Not Berwickshire Scarce'
- 'Berwickshire Fine' are a subset of 'selected axiophytes' for species which are well represented in Berwickshire and which are relatively scarce nationally
- The selection of the list of 'intrusive neophytes' is subjective. Most intrusive neophytes are only a problem in some sites. For example *Rosa rugosa* Japanese Rose is sometimes a problem at the coast but seldom inland. These characteristics are summarised in the individual species accounts.

Species account headers

The nomenclature, principal habitat and status follow the 'Check-list' section.

Statistics are given of the frequency of the species in Berwickshire and Britain. These are intended to give an indication of the relative frequency of the species in Berwickshire at monad, tetrad and hectad scale. The tetrad and hectad frequencies are compared with those for Britain as a whole enabling the reader to note whether the species is less frequent, more frequent or of much the same frequency. The statistics are not robust and can only give a general indication. For 'rare or scarce' species, other than arable weeds, the monad frequency is replaced by the number of sites in which it was thought likely to have been present in 2013, as analysed in the *Site Register*. Fractions are used where there is doubt about a species presence at a site. Recent introductions are separated from native or archaeophyte occurences, so the frequency of

Viburnum opulus Guelder-rose is given as '5½ + 12 sites', meaning that it is probably present in 5 or 6 sites as a native and in 12 as a planted introduction.

The sources of the statistics are as follows

- Berwickshire monad, tetrad and hectad frequencies 1987-2013 have been taken from the Berwickshire BSBI MapMate database and converted to percentages. Note that Berwickshire has 23 hectads with a total area of only 1,202km^2, so the hectad frequencies are affected by the high incidence of part hectads
- Britain hectad frequency 1987-1999 is taken from the *New Atlas of the British Flora* 2002 and converted to percentages. These frequencies are also affected by part hectads at the coast
- Britain tetrad frequency applies the statistics in *Change in the British Flora* 1987-2004 to the hectad frequency. There are a few species for which such a statistic is not available. Estimates have been used for these.

The sampling strategy for the Berwickshire surveys biases the statistics considerably. The monad coverage for the 'rare or scarce' species is nearly complete. The monad coverage becomes less and less complete as the frequency of the species considered increases, but it is more complete for species that favour botanically-rich habitats than for those more generally distributed, such as the arable weeds. The hectad coverage is much more nearly complete than the monad coverage, with the tetrad coverage intermediate. Similar caveats apply to the British data.

Distribution maps

Several map styles are used in the species accounts, all prepared in the Berwickshire BSBI MapMate database. One of the two main styles has an outline background featuring the river system. The other has an Ordnance Survey map as the background featuring the road system, habitation and contours that emphasise the upland areas. All are at monad (1km) scale. There are a few special maps displaying abundance, sometimes at 100m scale.

The style with the outline background places the emphasis on interpreting individual 'dots' and is particularly helpful for the scarcest species. It is also helpful for those species that are found mainly along the river system or the coast. The style with the Ordnance Survey map background places the emphasis on interpreting the distribution as a whole in relation to the road system, habitation and contours. It is particularly helpful for species of moorland and ruderal habitats.

The style with the outline background enables a relatively complex structure to be used for the map's 'dots'. Circles of decreasing size are used for the dateclasses 2000+ (2000-13), in red, and 1987-99, in blue. Crosses of decreasing size are used for the dateclasses 1970-86, blue, and pre 1970, black. 'Dots' relating to the two most recent dateclasses are highlighted in yellow, as for many species these two dateclasses are best thought of one, being to some extent complementary samples of the flora. This structure enables records for all four dateclasses to be displayed for an individual monad. This has the advantage that the possibility of both spread and decline over time can be reviewed on the same map. For a typical species, even for those species thought to be declining, 'new' sites will have been discovered in each of the four dateclasses and it is very much a matter of judgement whether the apparent gains and losses are 'real'. This style allows an assessment to be made by the reader with the help of the notes in the accompanying text.

For the more widespread native species, spread and decline over time are much less of an issue, as any change is likely to be at spatial scales finer than 1km. For these species the choice has been for maps with the Ordnance Survey map as a background, with a simpler structure for the 'dots'. The two historic dateclasses are combined as pre 1970. Two formats are used. For most native species the 'most recent on top' format is used, where more recent records are displayed in preference to older records from the same monad. The same colour, red, is used for both of the recent dateclasses as they are best thought of as complementary samples. Older records are shown in blue. This format enables apparent losses to be reviewed, but not apparent gains. For most neophytes the ‘oldest on top’ format is used, with different colours for each of three dateclasses, enabling apparent gains to be reviewed but not apparent losses. The oldest records are shown in green, unlike the ‘most recent on top’ maps where they are shown in blue.

Locality hectad grid references

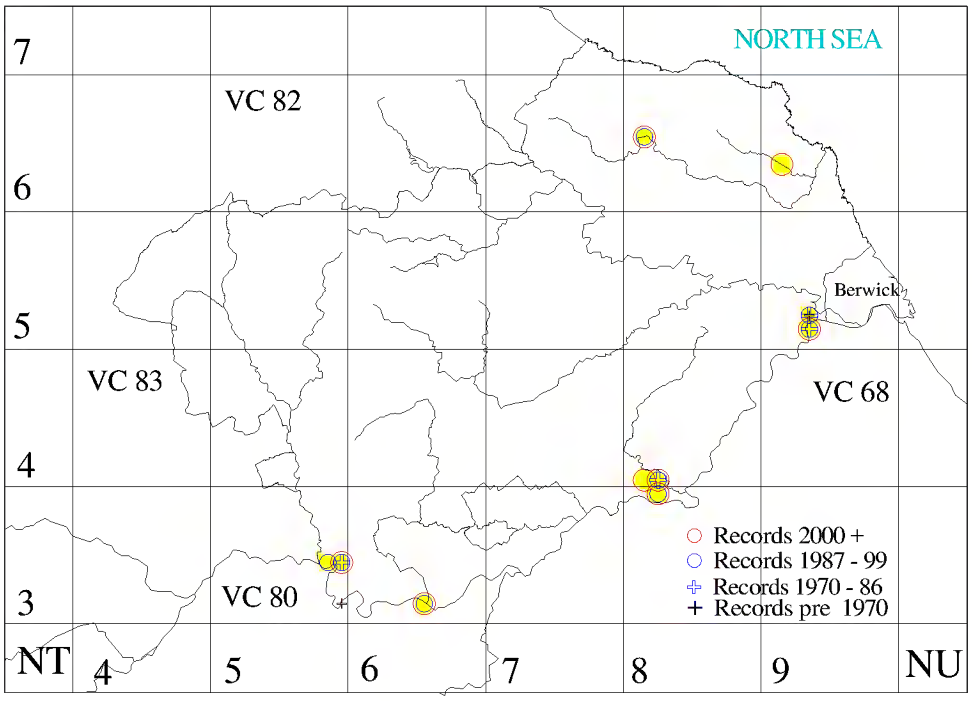
Localities mentioned in the species accounts are given in the form ‘Burnmouth 96’. This identifies the hectad NT96 in which Burnmouth lies. The hectad index at the back of this book enables the corresponding site description to be found in the ‘Botanical Tour’ section.

Species accounts in alphabetical order

Acaena novae-zelandiae Pirri-pirri-bur

Riverside, neophyte

Berwickshire 1987-2013	1% monads	3% tetrads	30% hectads
Britain 1987-1999		0.3% tetrads	2% hectads



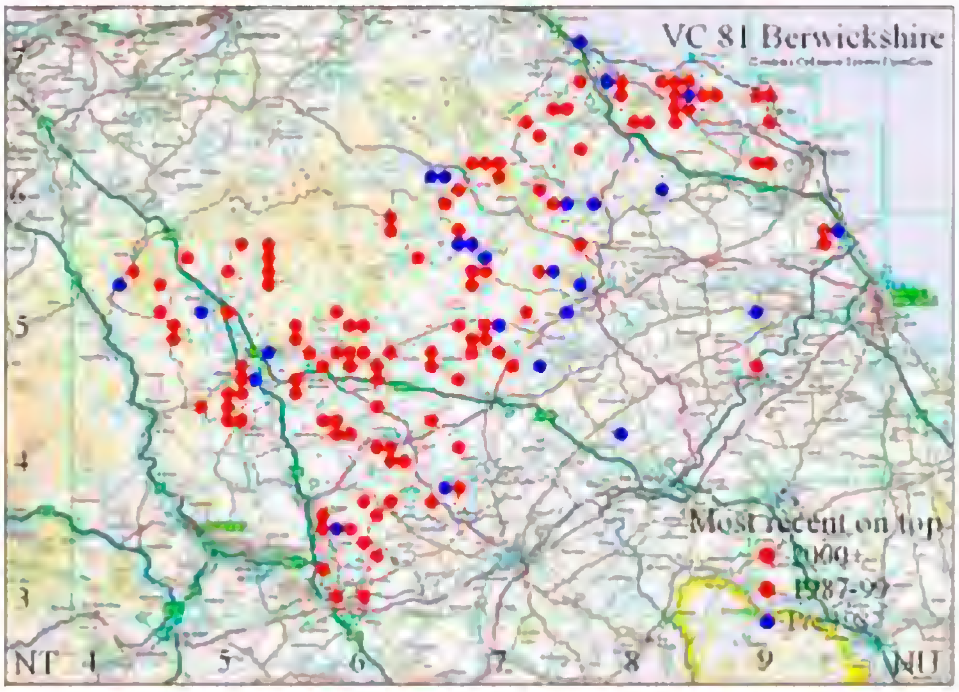
Acaena novae-zelandiae has a very thinly scattered distribution in Britain, except in the Scottish Borders and Northumberland where it is more frequent. It was originally introduced with sheep fleeces for the woollen trade in Galashiels. The spiny fruits disperse by adhering to animals, wildfowl and clothing or by being carried down a river by floods.

In Berwickshire there are colonies on banks above the River Tweed at Gaitheugh 53 and Dalcove 63, in Dundock Wood at the Hirsel 83, 84, by the river at Paxton House 95 and, more surprisingly, at Grantshouse Quarry 86 and Ale Mill 96. The colony at Dundock Wood was allegedly introduced by ornithologists returning from Holy Island, North Northumberland NU14 where it is a great pest in the sand dunes.

Achillea ptarmica Sneezewort

Wetland, native, other axiophyte

Berwickshire 1987-2013	10% monads	24% tetrads	70% hectads
Britain 1987-1999		44% tetrads	71% hectads



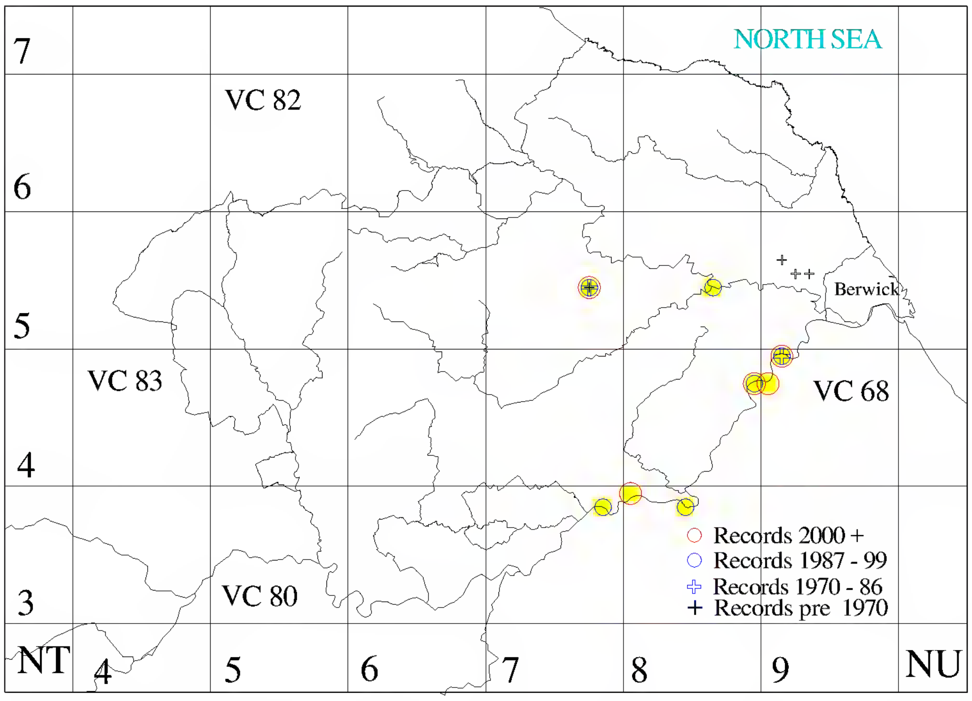
Achillea ptarmica is widespread in Britain except in the southeast of England. It grows in wet meadows, especially at the moorland edge, and is tolerant of acidic conditions. It is somewhat localised in Berwickshire as the moorland edge is a habitat that is subject to agricultural improvement and many populations are quite small. However this is a late-flowering plant that is easily overlooked in midsummer, so it is under-recorded.

One might expect the map to show evidence of decline but, except for probable losses of a few old records towards the arable areas of the southeast of the county, this is not evident as its often rather undistinguished habitats have been much ignored in the past. The one recent record from the lower stretches of the River Tweed was probably casual. There is no suggestion from field work that any of the recently discovered sites are new colonisation at 1km scale, though fluctuations may occur at 100m scale, such as the colonisation of ditches along forestry rides when moorland is planted with conifers.

Acorus calamus Sweet-flag

Aquatic, neophyte, prominent neophyte

Berwickshire 1987-2013	0.7% monads	2% tetrads	26% hectads
Britain 1987-1999		3% tetrads	13% hectads

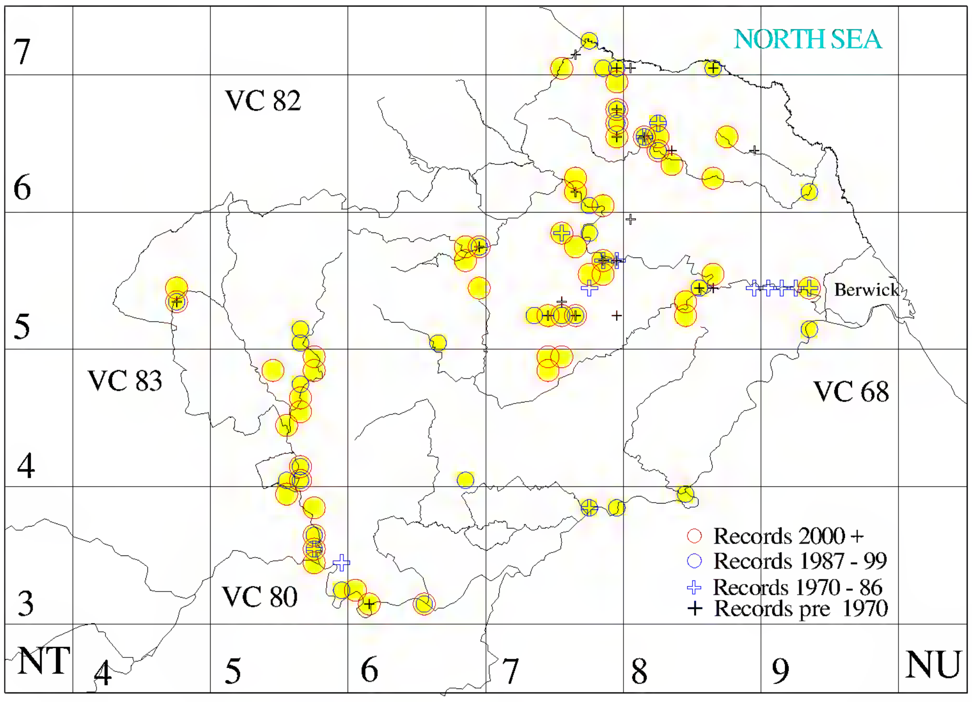


Acorus calamus is relatively widely naturalised in England but is scarce in Scotland. In Berwickshire it has been known since 1881 by the Hen Poo at Duns Castle 75 and more recently in a few places by the Tweed downstream from Kelso. The first record by the Tweed was not made until 1983. Some of the colonies at the water's edge are quite extensive and may be accompanied by *Butomus umbellatus* Flowering-rush. There is one record from the Blackadder Water near its confluence with the Whiteadder 85. This is a shy-flowering species and non-flowering plants are easily overlooked, as it can be mistaken for *Sparganium erectum* Branched Bur-reed, so it is probably under-recorded. It seems likely to increase.

Adoxa moschatellina Moschatel

Woodland, native, other axiophyte

Berwickshire 1987-2013	6% monads	16% tetrads	78% hectads
Britain 1987-1999		23% tetrads	50% hectads


NORTH SEA
VC 82
VC 83
VC 80
VC 68
Berwick
Records 2000 +
Records 1987 - 99
Records 1970 - 86
Records pre 1970
7
6
5
4
3
NT
4
5
6
7
8
9
NU

Adoxa moschatellina is largely confined to the native riverside woodlands. It is frequent in damp, relatively rich soils under ash, elm and hazel along the Leader and Boondreigh Waters but less so in the east of the county. Isolated populations occur under the shade of rocks at Hareheugh Craigs 64 and Great Dirrington Law 65.

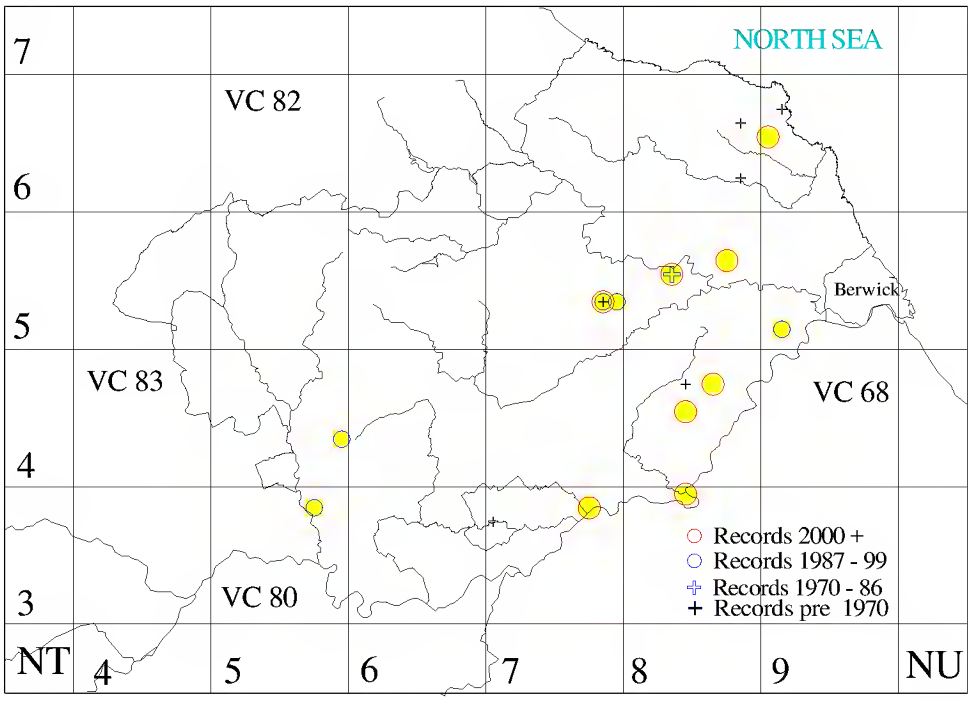
In many of the sites the populations are more or less confined to the floodplain. Where this is so, they are now being overwhelmed by the spread of *Allium paradoxum* Few-flowered Garlic. The populations in the lower Whiteadder have been particularly severely affected. Where native woodland has been converted to mixed plantation in sheltered sites, *Adoxa* has usually survived under re-growth from the stools of old native trees. In more open sites, as in the Tweedside woodlands downstream of Birgham 73, *Adoxa* is rare.

There is no evidence of recent colonisation, though some short-distance dispersal is likely within a wood on the floodplain.

Aethusa cynapium Fool's Parsley

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	9 sites	3% tetrads	39% hectads
Britain 1987-1999		34% tetrads	50% hectads


NORTH SEA
VC 82
VC 83
VC 80
VC 68
Berwick
Records 2000 +
Records 1987 - 99
Records 1970 - 86
Records pre 1970
7
6
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4
3
NT
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NU

Aethusa cynapium is very widespread in England but scarce in Scotland. It is an annual of arable fields, gardens and disturbed ground.

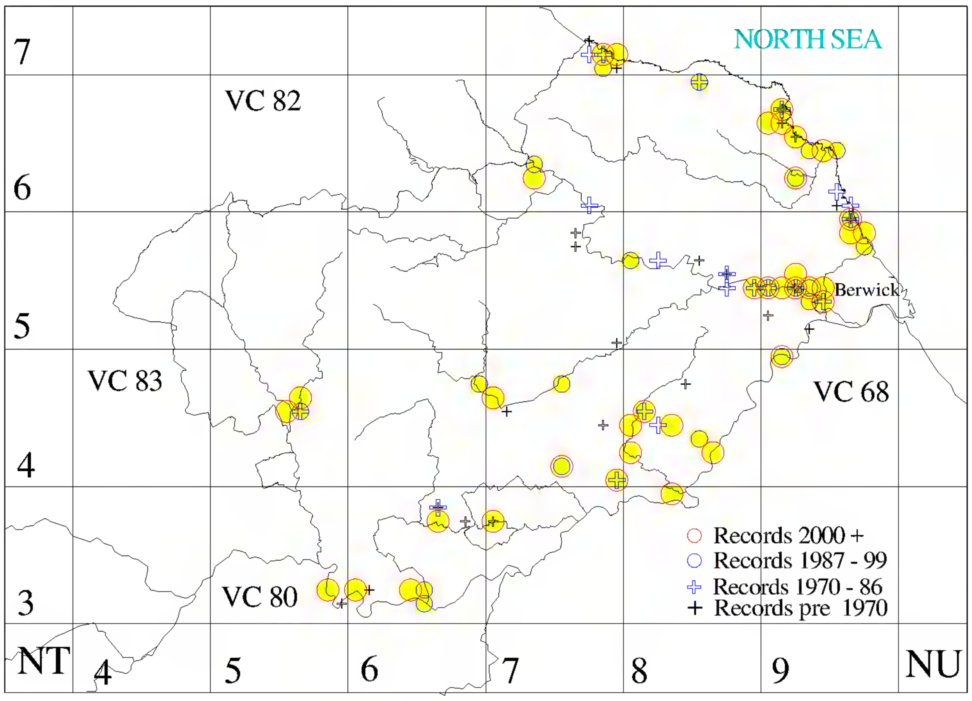
A large population was seen in 2004 in a field near Edrom 85, but most recent records have been from disturbed ground where it is more or less casual. It is quite frequent in and about Duns 75.

It may always have been scarce in Berwickshire.

Agrimonia eupatoria Agrimony

Grassland, native, selected axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	65% hectads
Britain 1987-1999		35% tetrads	55% hectads


NORTH SEA
VC 82
VC 83
VC 68
VC 80
Berwick
7
6
5
4
3
NT
4
5
6
7
8
9
NU
○ Records 2000 +
○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970

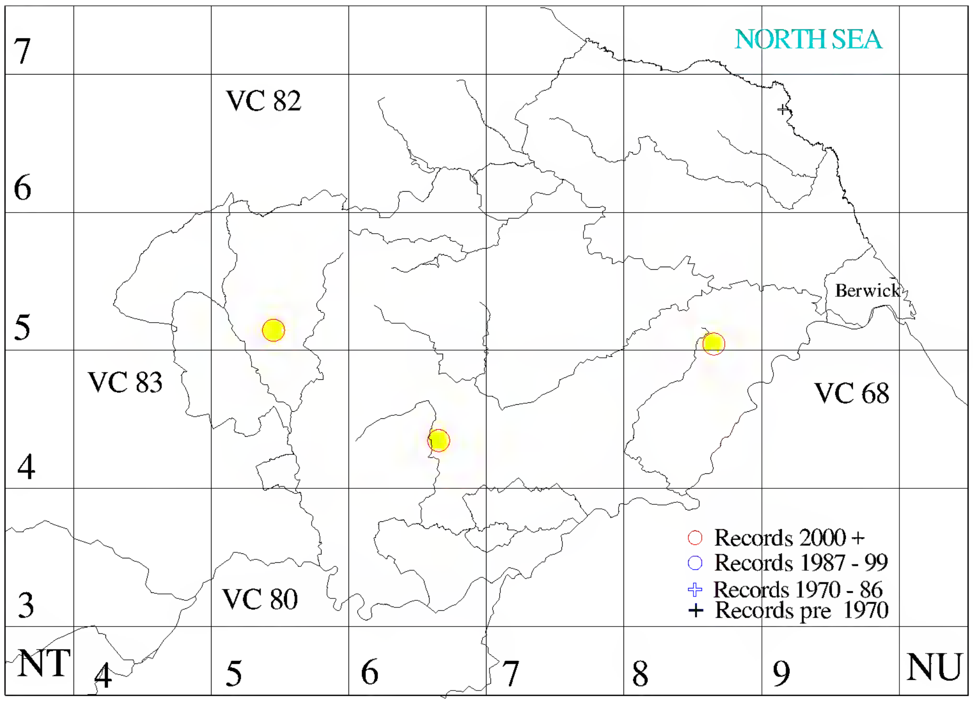
Agrimonia eupatoria is very widespread in England and Wales but local and somewhat coastal in Scotland. It prefers basic soils and is not very tolerant of high grazing pressure. In Berwickshire it is found on a few of the sea braes, notably at Hilton Bay 95 where it is plentiful. Inland it is found on the steep braes by the lower Whiteadder 95 and again at the foot of the Boondreigh Water 54. It occurs more widely at roadsides and field headlands where it depends on the landform offering some protection from fertiliser application. Most of the colonies are small or very small.

Recent losses appear to be related to scrub invasion on braes and to eutrophication of field headlands.

Agrostemma githago Corncockle

Arable, extinct archaeophyte, sown but not naturalised, former rare or scarce

Berwickshire 1987-2013	0.3% monads	0.9% tetrads	13% hectads
Britain 1987-1999		0.7% tetrads	9% hectads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+ Records pre 1970

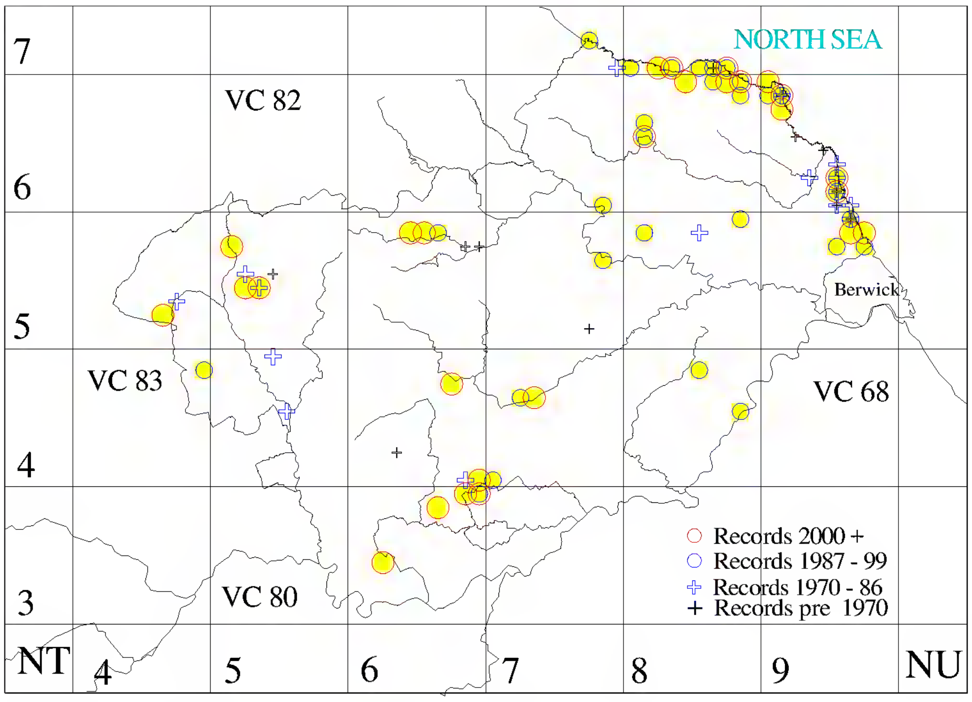
Agrostemma githago is a showy annual formerly widespread as an arable weed in England, but now usually found where it has been included in sown wildflower seed mixes.

The recent Berwickshire records have been of sown plants. These were at Earnscleugh House 55, near Gordon 64 and at Whitsome 85. It was formerly known as a cornfield weed but the only localised record was back in 1855.

Aira caryophyllea Silver Hair-grass

Grassland, native, other axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	70% hectads
Britain 1987-1999		15% tetrads	50% hectads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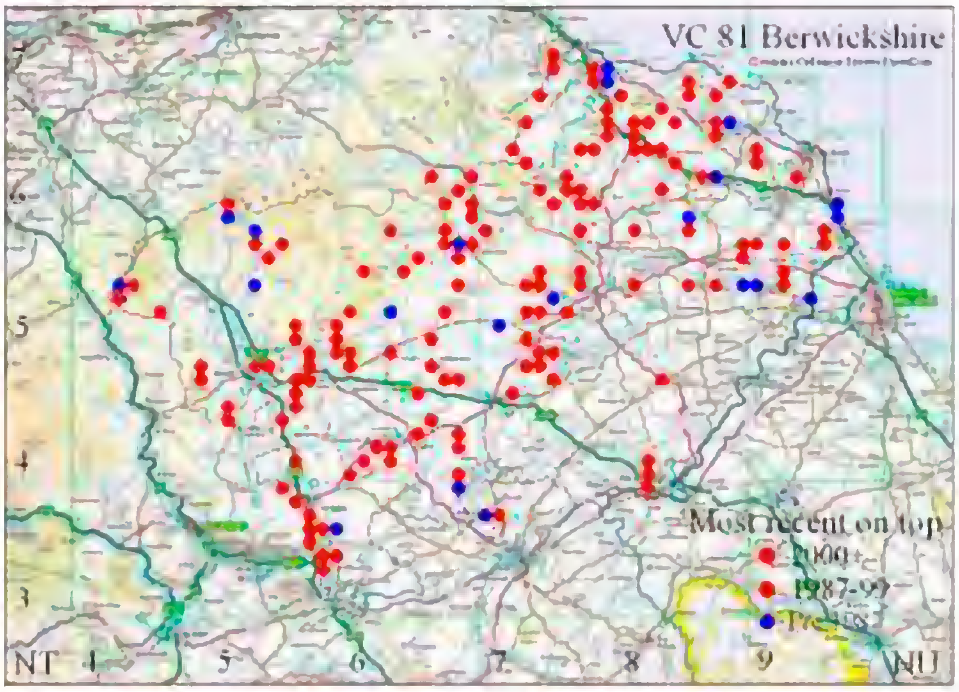
Aira caryophyllea is very widely distributed across Britain but is somewhat local. It is a grass of drought-prone habitats with some base-enrichment. In Berwickshire it is most frequent on the sea braes and in the grasslands of the igneous rocks of the Kelso Traps 63, 64. In the Lammermuirs it is strongly associated with *Helianthemum nummularium* Common Rockrose, as indeed it is in its other localities.

The record suggests that some of the more isolated inland colonies have been lost recently, either to eutrophication or to scrub invasion, especially by whins.

Ajuga reptans Bugle

Woodland, native, other axiophyte

Berwickshire 1987-2013	13% monads	33% tetrads	87% hectads
Britain 1987-1999		58% tetrads	78% hectads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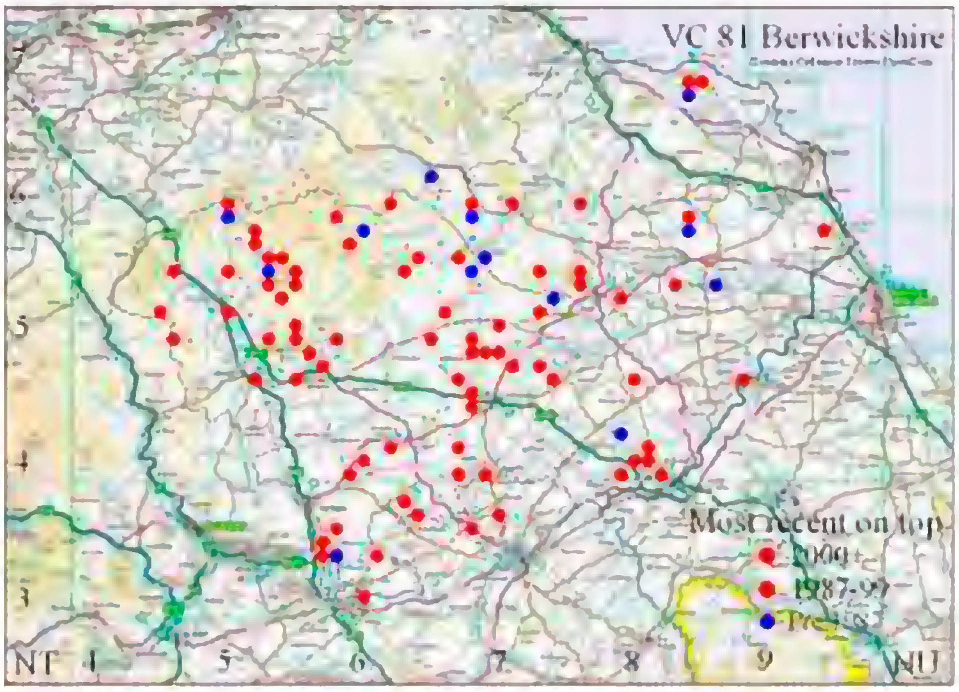
Ajuga reptans is very widespread throughout Britain. Although it is primarily a herb of damp woodland it is also widespread as a hill plant of damp burnsides which may or may not have been wooded in the past. In Berwickshire it is quite scarce in the lowlands, being almost absent from the coast and the poor scraps of woodland by the River Tweed downstream of Gaitheugh 53 and scarce by the other lowland rivers. On the other hand it is frequent by the Leader Water and many of the hill burns.

There is little evidence of colonisation except within a site and it would require more detailed survey to identify any recent losses.

Alchemilla filicaulis subsp. vestita Hairy Lady's-mantle

Grassland, native, other axiophyte

Berwickshire 1987-2013	6% monads	19% tetrads	74% hectads
Britain 1987-1999		14% tetrads	30% hectads



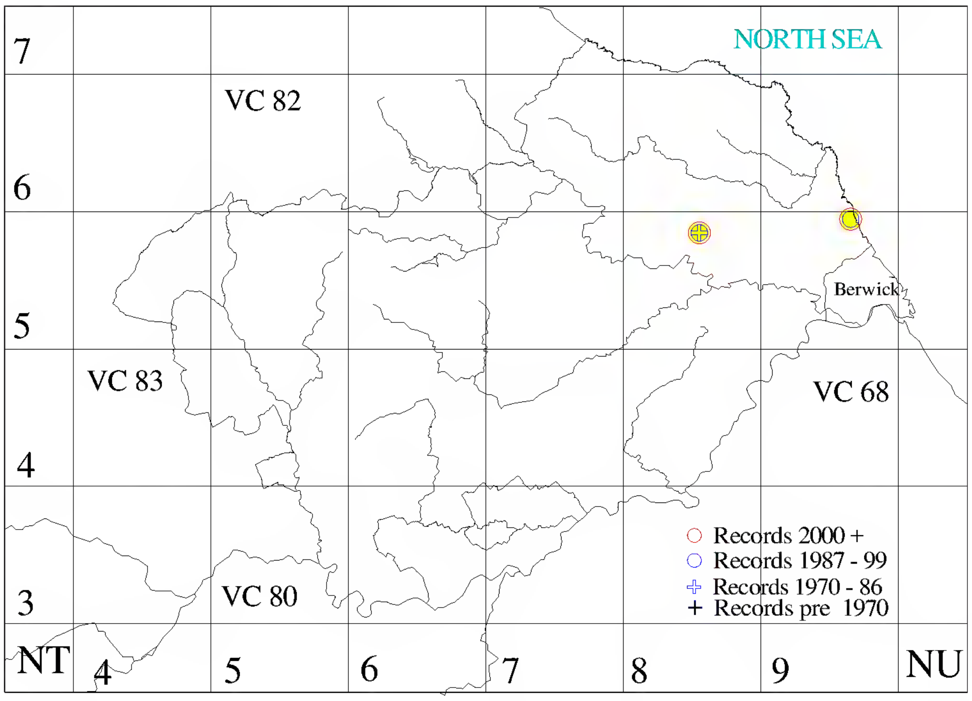
Alchemilla filicaulis subsp. vestita is a widely distributed taxon both nationally and in Berwickshire. It is indicative of relatively well-drained neutral to base-rich grassland. *Subsp. filicaulis* is a plant of the higher hills that is not known in the county. In Berwickshire, *subsp. vestita* is notably absent from the sea braes and has its headquarters along the hill burns of the Lammermuirs. Elsewhere it is very local and is found in fragments of grassland that have escaped reseeding and the invasion of coarse grasses into grassland that is ungrazed or eutrophic. Some colonies are in mown road verges.

Although the historical record is patchy, this would seem to be a decreasing taxon, especially away from the hills.

Alchemilla glaucescens Silky Lady's-mantle

Grassland, native, rare or scarce, British scarce

Berwickshire 1987-2013	1¾ sites	0.6% tetrads	9% hectads
Britain 1987-1999		0.1% tetrads	1% hectads



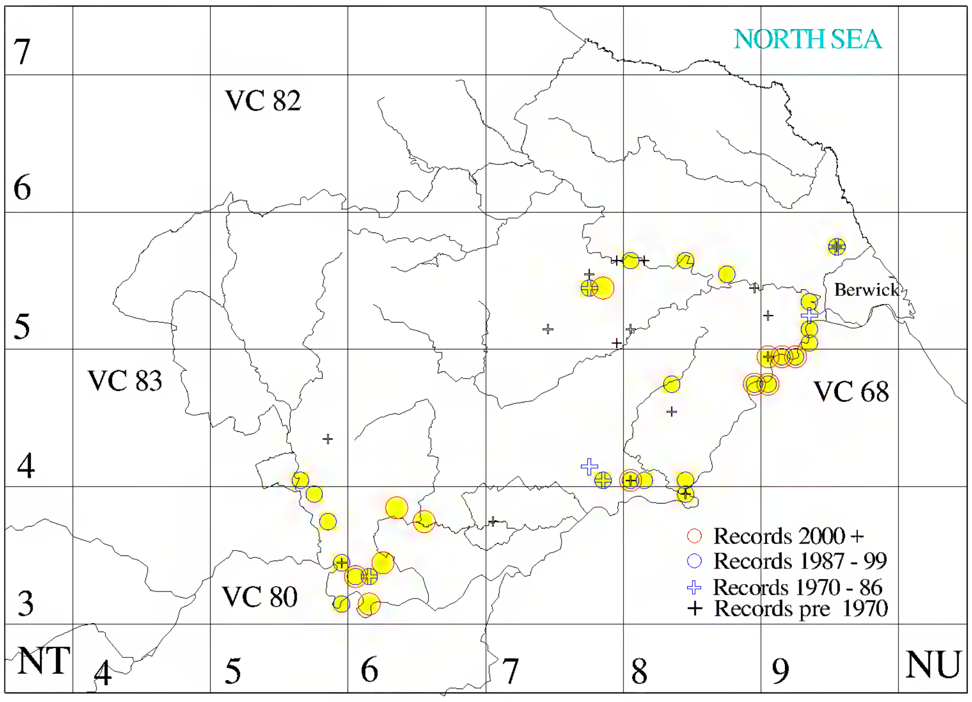
Alchemilla glaucescens is an attractive silvery perennial of sparse grassland with limestone boulders. It is near-threatened in Britain. The main populations are in the Ingleborough district of Yorkshire.

A small colony was discovered in 1982 in a fragment of base-rich cattle-grazed grassland in a cutting on the old railway near Oldcastles 85, but this has now almost been destroyed by the spread of scrub following the cessation of grazing. Two plants were seen in 2013. A fine colony was discovered in 1999 on eroding sea braes at Hilton Bay 95 in a species-rich community with *Sanguisorba minor* Salad Burnet and *Primula veris* Cowslip. This colony has recently been affected by ground stabilising works to safeguard the mainline railway above. These have been all too successful and have led to the spread of scrub. No plants of the *Alchemilla* were found there in 2013.

Alisma plantago-aquatica Water-plantain

Aquatic, native, other axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	43% hectads
Britain 1987-1999		30% tetrads	55% hectads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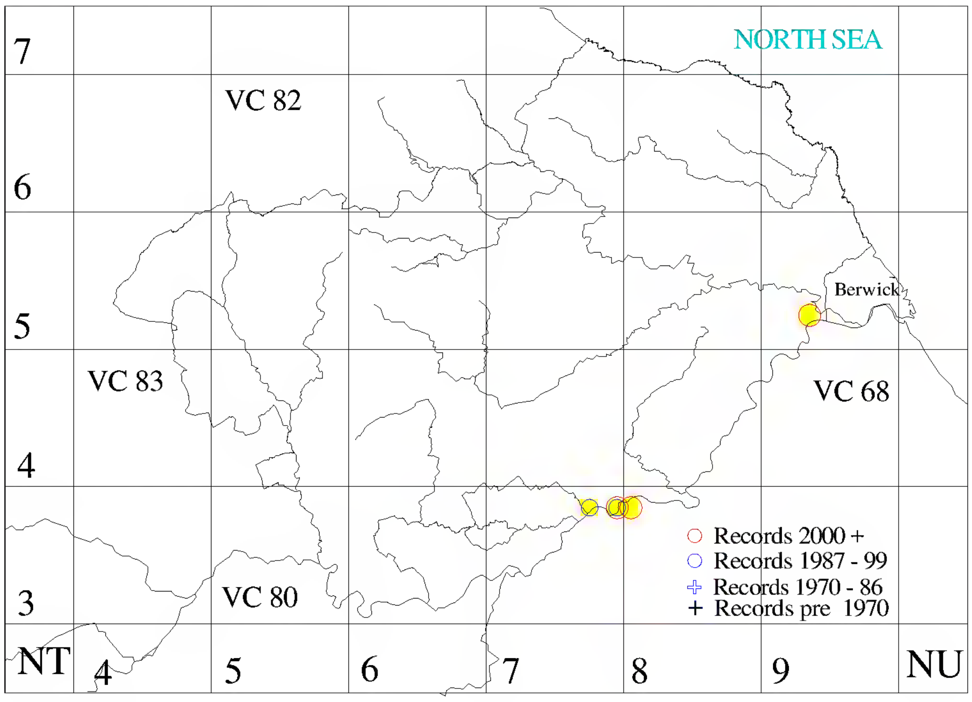
Alisma plantago-aquatica is a plant of the muddy margins of ponds and rivers that is widespread in England but more local in Scotland. It is rather scarce in Berwickshire and may well be declining. Competition with *Butomus umbellatus* Flowering-rush and *Glyceria maxima* Reed Sweet-grass, both relatively recent colonists of riversides, might be a factor, though *Alisma* is quite frequent below Blount Bank 84 and Fishwick Mains 94. More relevant may be the fashion to exclude grazing stock from watersides, both ponds and rivers. However, new ponds have not been visited systematically and this species may be under-recorded.

In common with many aquatics, this species may not be very site-faithful. Its habitat is a shifting one and it appears to be quite an efficient colonist.

Allium carinatum Keeled Garlic

Riverside, neophyte

Berwickshire 1987-2013	0.4% monads	1% tetrads	13% hectads
Britain 1987-1999		0.3% tetrads	3% hectads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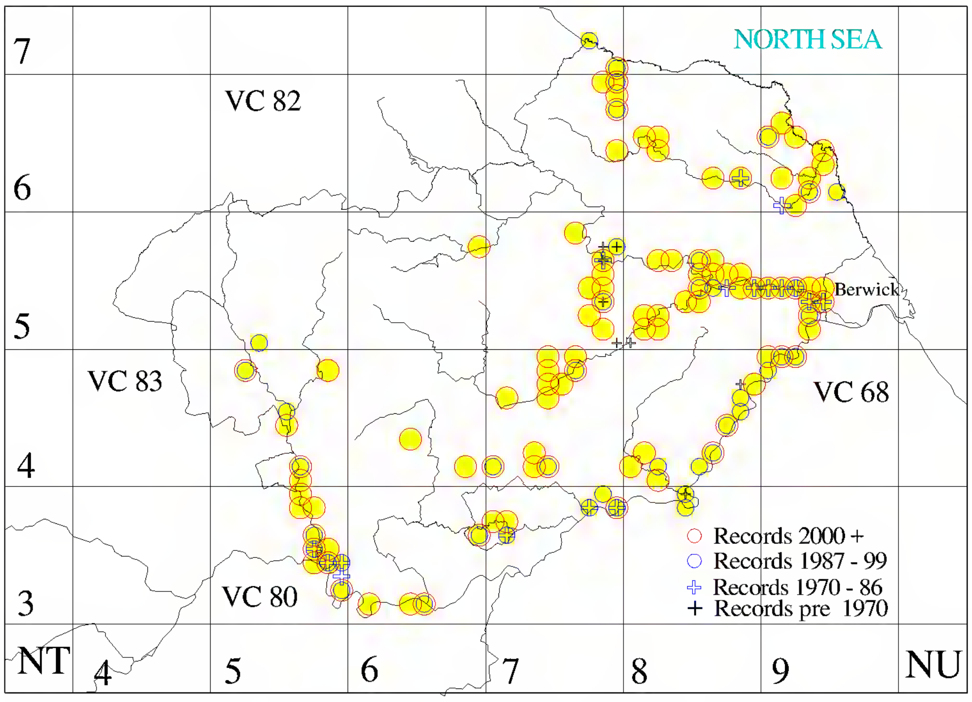
Allium carinatum has a thinly scattered distribution across Britain, with modest concentrations in a few places including the River Tweed. It seems to have been introduced to the Tweed catchment at Hawick, Roxburghshire NT51, where it is rather plentiful, and to have spread down the river system. It grows in silt amongst damp rocks and in the shade of trees or hedges and can form quite extensive colonies which flower in August. Bulbils are also produced and they are likely to be the main means of dispersion. It has been found in Berwickshire by the River Tweed below Lochton 73, on rocks by the river opposite Carham 73, 83 and at Paxton House 95.

Allium paradoxum Few-flowered Garlic

Woodland, neophyte, intrusive neophyte

Berwickshire 1987-2013	10% monads	23% tetrads	78% hectads
Britain 1987-1999		2% tetrads	9% hectads



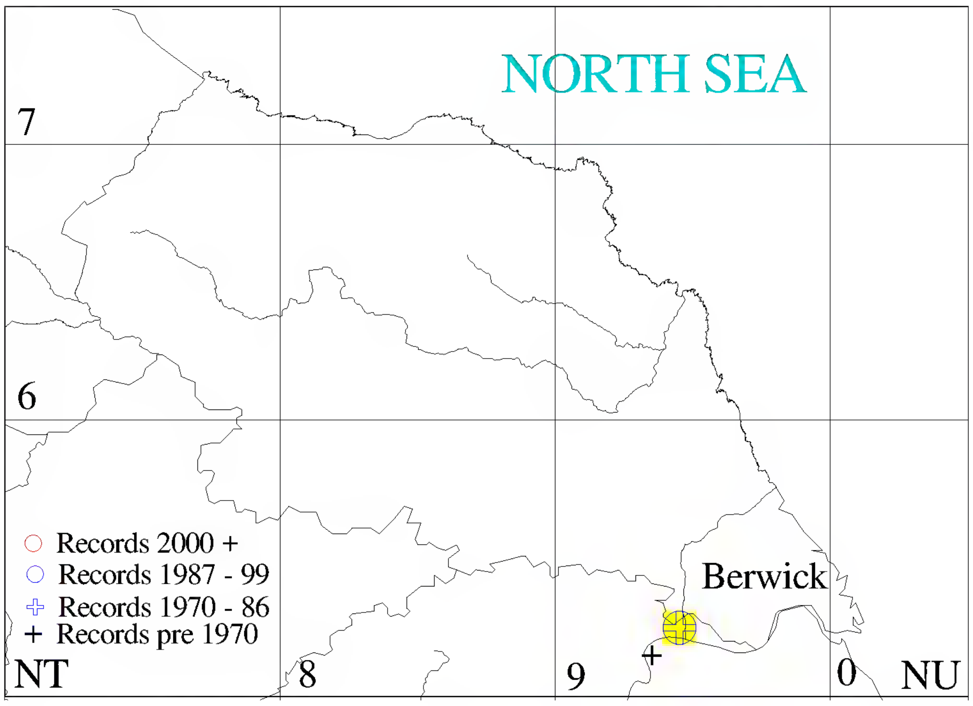
Allium paradoxum was first recorded in Berwickshire in 1947. It is now almost as widespread as the native *Allium ursinum* Wild Garlic and, like that species, its foliage swamps other spring flowers in woodland. It produces abundant bulbils in the flower heads and its bulbs produce many offsets below ground. These bulbils are very effectively dispersed along river systems by floods but are also adept at hitching a lift in the treads of vehicle tyres and in the cloven feet of deer. I had seriously underestimated the threat to riverside woodlands in the false belief that it would remain confined to the floodplain. But roe deer are everywhere in such woodland and one can observe the *Allium* taking hold along the deer tracks up the steep banks.

This is much the most invasive neophyte in Berwickshire and is seemingly certain to increase greatly in abundance along river corridors and, more gradually, in towns and villages, in woods and along hedgerows. It does not colonise cultivated land or grassland that is grazed or regularly mown short.

Allium scorodoprasum Sand Leek

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	½ sites	0.3% tetrads	4% hectads
Britain 1987-1999		0.7% tetrads	5% hectads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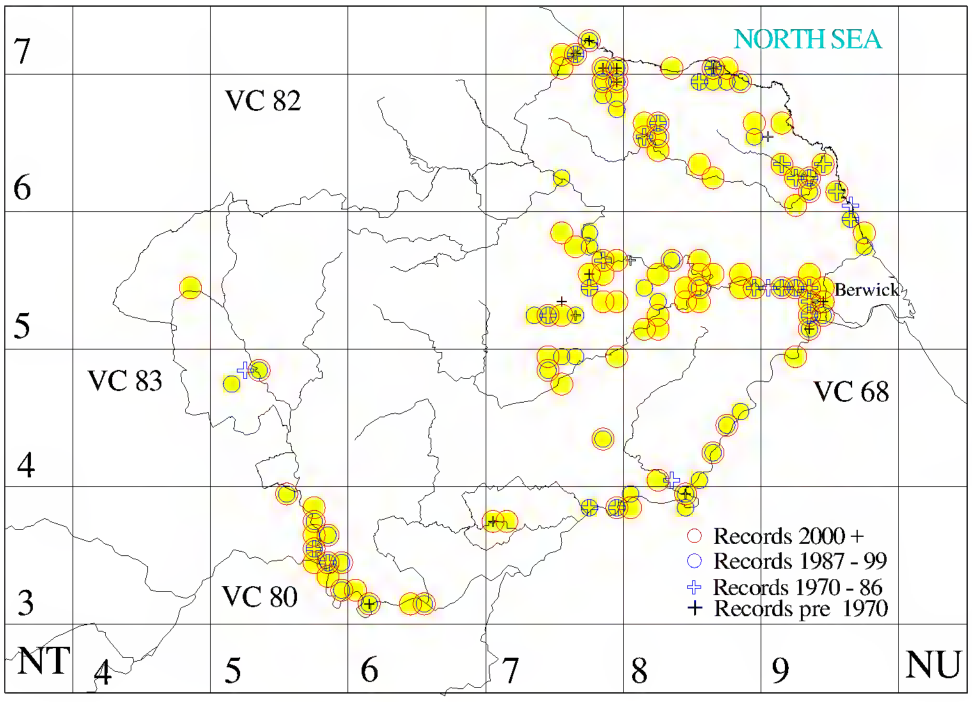
Allium scorodoprasum is near-scarce in Britain and is found mainly in northern England. It is probably an introduction in the Scottish Borders, though it has been known for two centuries at the mouth of the Whiteadder Water and more recently in Berwick, both of which are in North Northumberland.

Almost or quite extinct in Berwickshire in sandy grassland in a 'green lane' on the English Border 95 where it was last seen in 1999.

Allium ursinum Ramsons

Woodland, native, other axiophyte

Berwickshire 1987-2013	10% monads	24% tetrads	74% hectads
Britain 1987-1999		33% tetrads	63% hectads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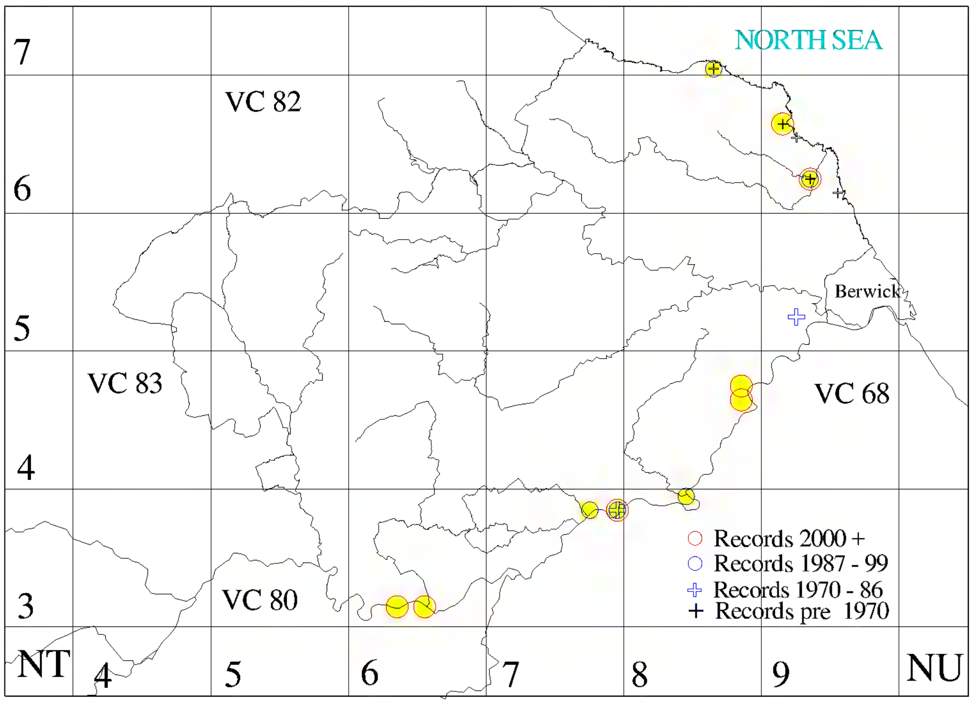
Allium ursinum is very widespread in Britain except in the Scottish Highlands and the fens of East Anglia. It is a locally dominant vernal plant of wet woodland. In Berwickshire it is largely confined to the better preserved valley woodlands, being strongly associated with *Ulmus glabra* Wych Elm but surviving where this has been largely replaced by other trees. On the coast it may be present in gullies and bracken covered slopes that are no longer wooded. Some of the riverside records refer to tiny populations on river banks that are more or less casual.

This species is so persistent where it occurs that it would only be lost if riverside woodland was completely destroyed, which has not been happening recently. It has so far been competing effectively against the onslaught of *Allium paradoxum* Few-flowered Garlic, though the balance between the two species is a fine one in the wet areas of a wood. There is mobility along the riversides, where bulbs are transported by floods, but there is no evidence of further recent colonisation.

Allium vineale Wild Onion

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	9 sites	2% tetrads	26% hectads
Britain 1987-1999		15% tetrads	35% hectads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+ Records pre 1970

Allium vineale is widespread in southern Britain but more local in the north where it is often coastal.

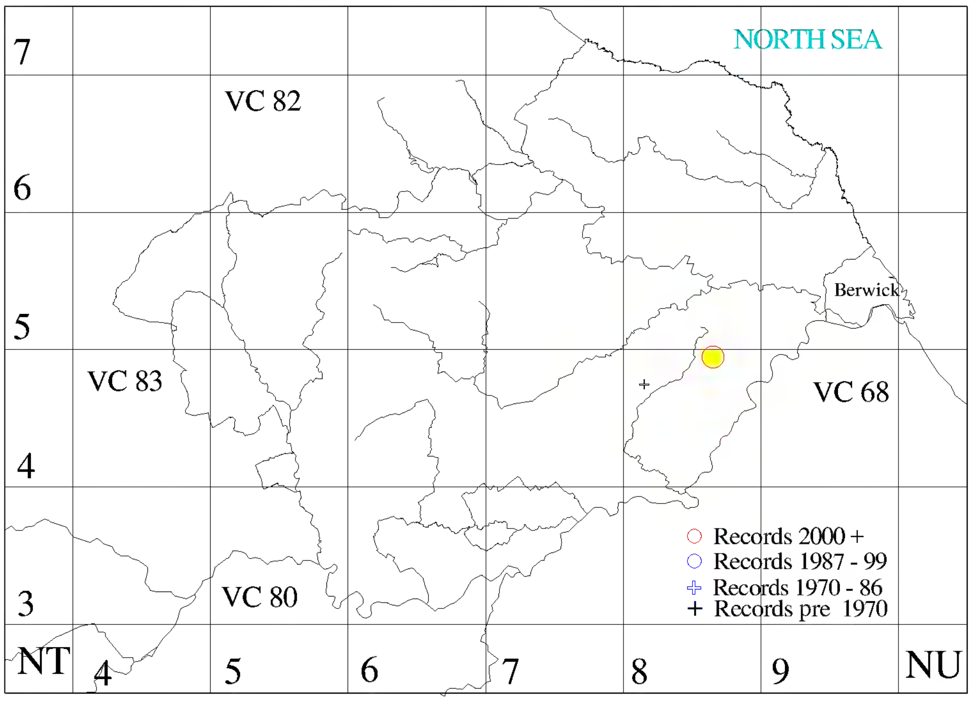
Some of the Berwickshire colonies of are *var. compactum* and, somewhat unusually, some are found on calcareous rocks as at the Kip Rock on the Eye Water 96 and in Dowlaw Dean 87. Other colonies occur in riverside grassland, the habitat usual in North Northumberland and Roxburghshire. Studies are required to see if populations differ between the two habitats.

The colonies on rocks are stable and occur at sites with other botanical interest. The riverside colonies probably represent relatively recent colonisation.

Alopecurus myosuroides Black-grass

Arable, neophyte, prominent neophyte

Berwickshire 1987-2013	0.1% monads	0.3% tetrads	4% hectads
Britain 1987-1999		24% tetrads	31% hectads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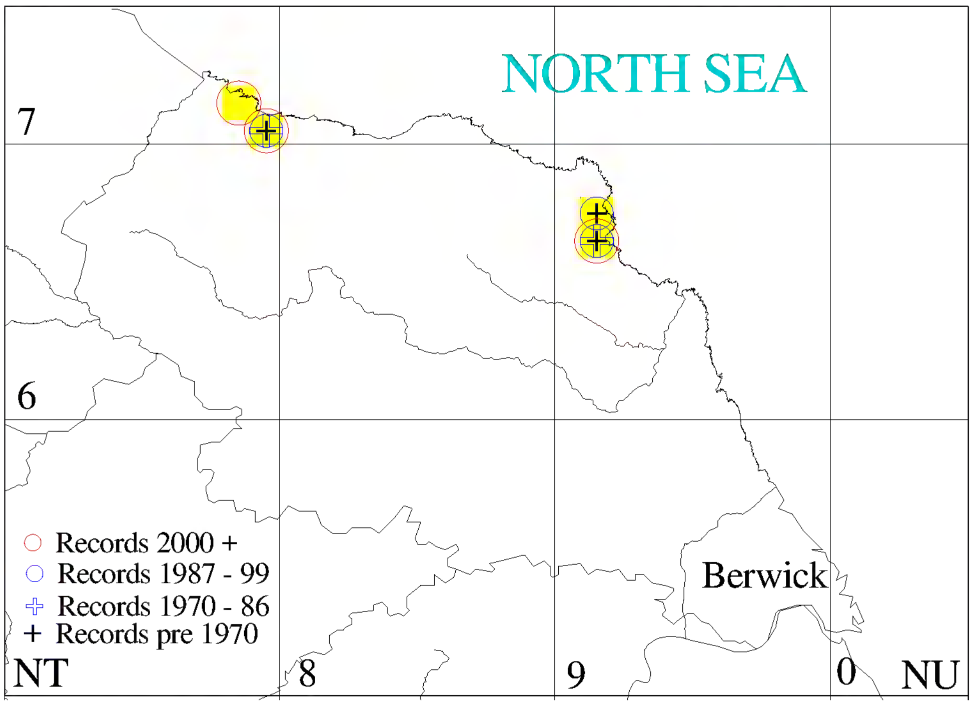
Alopecurus myosuroides is a bad weed of cereal crops in southern and eastern England but is very scarce elsewhere. There are as yet only two Berwickshire localities, near Swinton 84 where it was recorded in 1941 and 1951 and near Whitsomehill 84 where it was recorded in relatively modest quantity in 2005 and 2009 in wheat, beans and oilseed rape crops. It is something of a surprise that this unwelcome colonist has not yet been detected elsewhere.

Ammophila arenaria **Marram**

Coast, native, rare or scarce

Berwickshire 1987-2013	3 sites	0.6% tetrads	9% hectads
Britain 1987-1999		4% tetrads	16% hectads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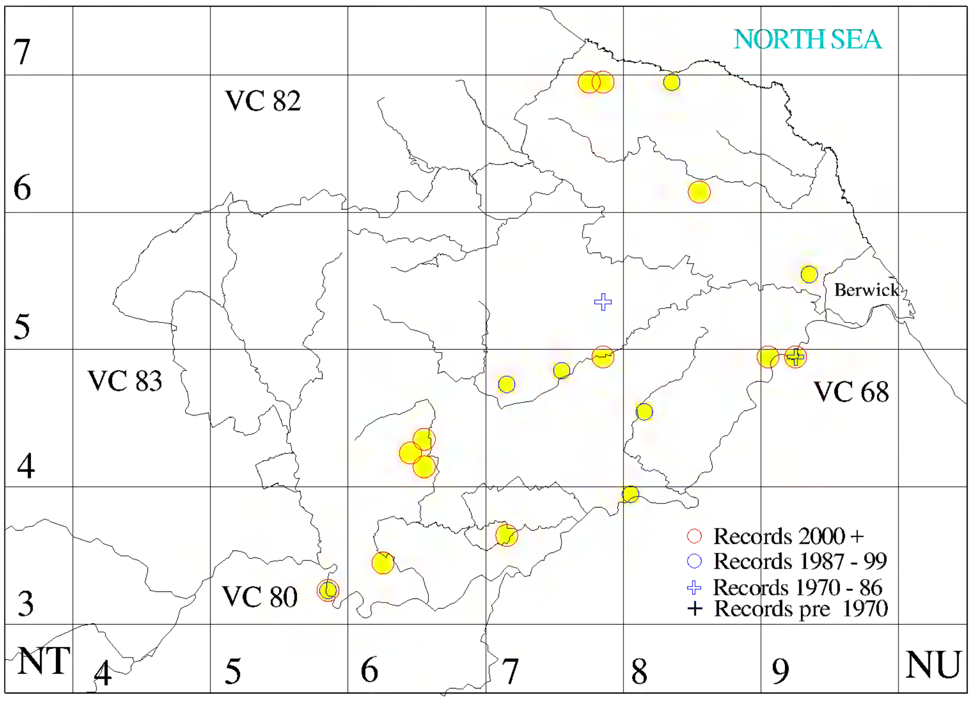
Ammophila arenaria is the classic sand dune plant and is found all round the British coast.

The small number of sites in Berwickshire reflects the shortage of sandy beaches and dunes. The main colonies are in Pease Bay 87 and Coldingham Bay 96 and are in good health. That at Coldingham Bay was introduced, at least in part, to stabilise sand.

Amsinckia micrantha **Common Fiddleneck**

Arable, neophyte, prominent neophyte

Berwickshire 1987-2013	1% monads	5% tetrads	48% hectads
Britain 1987-1999		3% tetrads	10% hectads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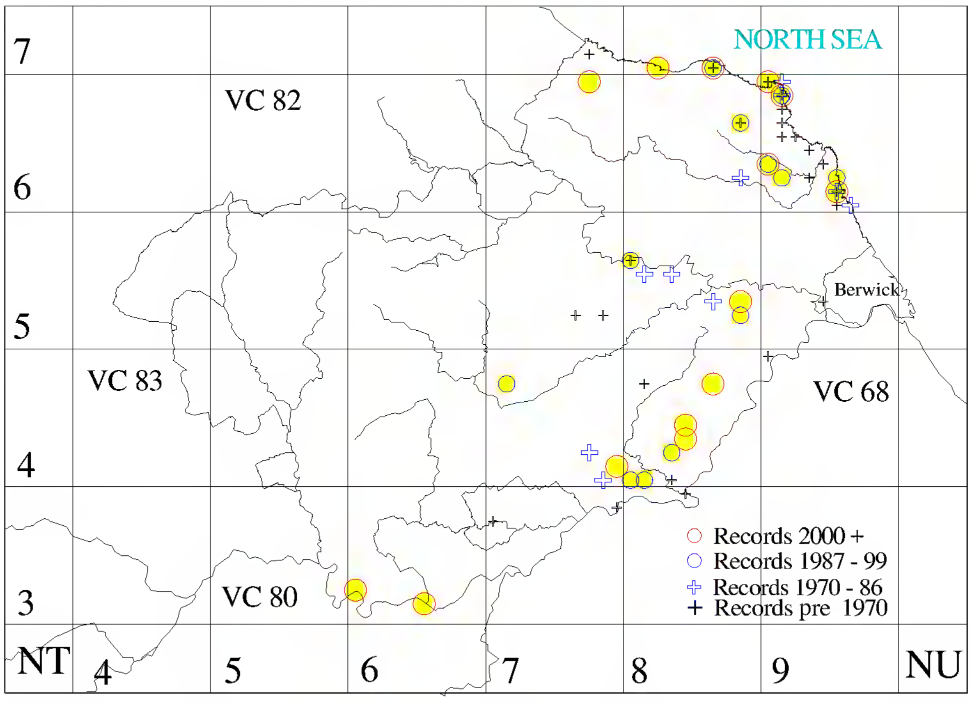
Amsinkia micrantha is patchily distributed in cereal growing areas in the east of Britain. In Berwickshire it has been quietly colonising arable fields since 1983. It favours sandy soils, such as fields near the Tweed at Fishwick Mains 94 and fields near the sand and gravel quarries near Cockburnspath 76. It is seldom plentiful enough to be a significant weed as normal weed control serves to contain it.

Anagallis arvensis Scarlet Pimpernel

Arable, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	35% hectads
Britain 1987-1999		47% tetrads	58% hectads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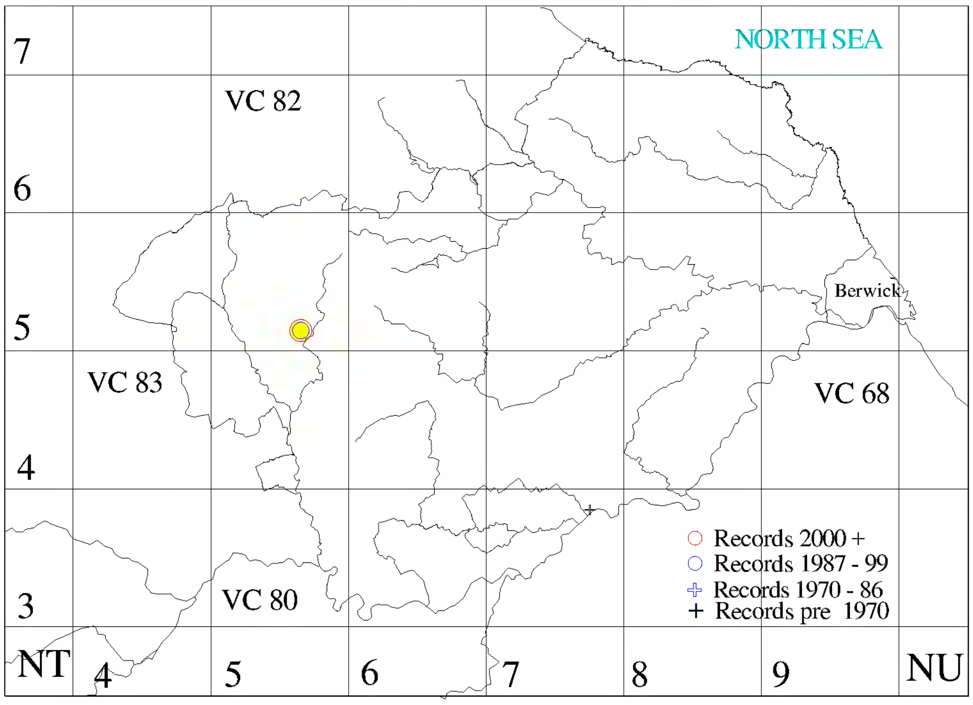
Anagallis arvensis is very widespread in England and Wales both as an arable weed and as an annual of dry or sandy sites. From Northumberland northwards it is much scarcer and largely coastal. There are a few coastal sites in Berwickshire, notably on scree slopes at St Abbs Head 96 but it is slightly more frequent as an arable weed on the lighter soils, mainly those on the Carboniferous Sandstone in the Merse where its plight is indicative of the pressures on the arable weed flora. It is usually found in cereal crops or setaside. Most colonies are small and only apparent when a field corner or field edge of a cereal crop has escaped the full force of herbicides. However a colony of 500 plants was found in a grassy strip at a field edge near Mountfair 84 in 2006 and it was frequent for 300m round the edge of a barley crop by Crown Gorse 74 in 2013.

Recent trends are uncertain, but this is a locally near-scarce plant probably continuing to decline as an arable weed.

Anagallis tenella Bog Pimpernel

Wetland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		10% tetrads	30% hectads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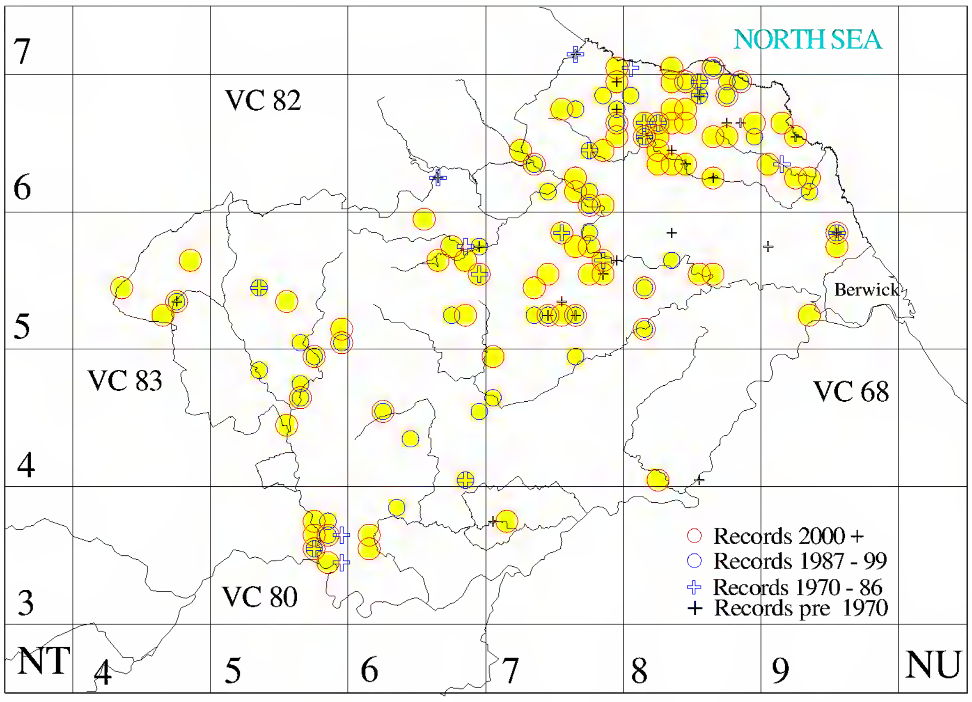
Anagallis tenella is mainly a plant of western Britain. It is usually a plant of damp coastal grassland, but also occurs in inland calcareous flushes.

There is one fine Berwickshire site in the Lammermuirs, up the Wheel Burn off the Blythe Water 55, with colonies in two neighbouring base-rich flushes near the burn.

Anemone nemorosa Wood Anemone

Woodland, native, other axiophyte

Berwickshire 1987-2013	10% monads	25% tetrads	78% hectads
Britain 1987-1999		47% tetrads	74% hectads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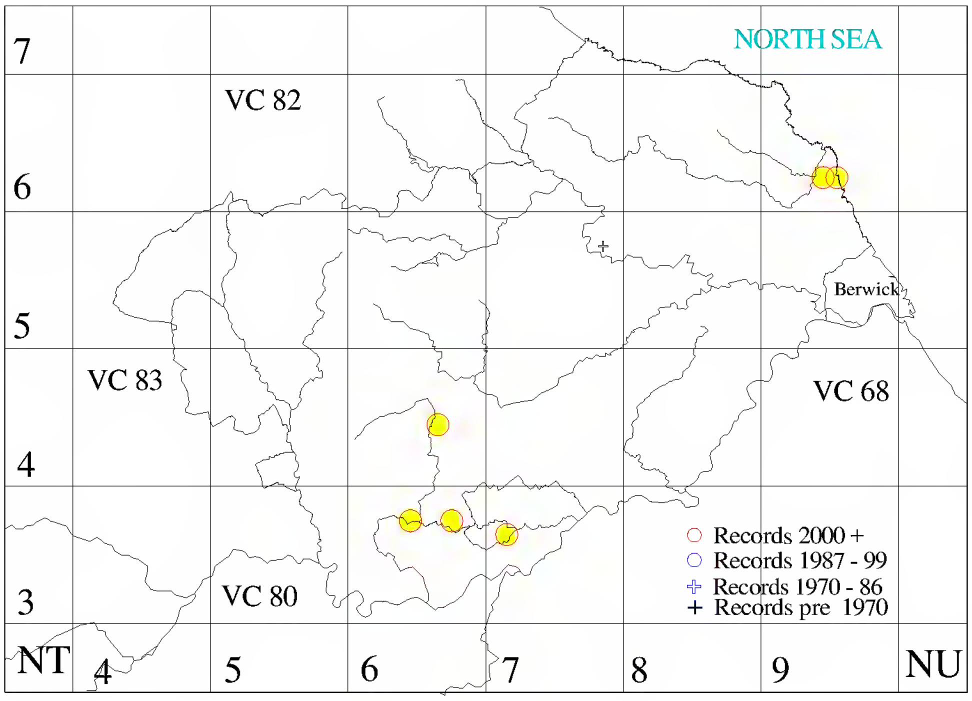
Anemone nemorosa is very widespread in Britain in woodland and moorland, preferring woodland on poor soils. It forms large clonal patches, some of which may be very ancient. The Berwickshire distribution is restricted by the sad history of the lowland woodlands with frequent clear felling, nevertheless the near absence from the lower Whiteadder Water is surprising and it may have escaped detection there in some of the scraps of former oak woodland at the top of cliffs. The best colonies are in the Abbey St Bathans oak woods 76, Langtonlees Cleugh 75 and the woods of the upper Eye and Ale Waters 86 and the Pease Burn 76. There is only a scatter of records in the hills. Muirburn has probably eliminated this species from much of the open moorland leaving colonies in some of the cleughs and the few upland woods, such as Airhouse Wood 45.

There may well have been recent losses, but it would take more dedicated survey to establish these. There is no evidence of recent colonisation.

Anisantha diandra Great Brome

Arable, neophyte, prominent neophyte

Berwickshire 1987-2013	0.5% monads	2% tetrads	17% hectads
Britain 1987-1999		4% tetrads	8% hectads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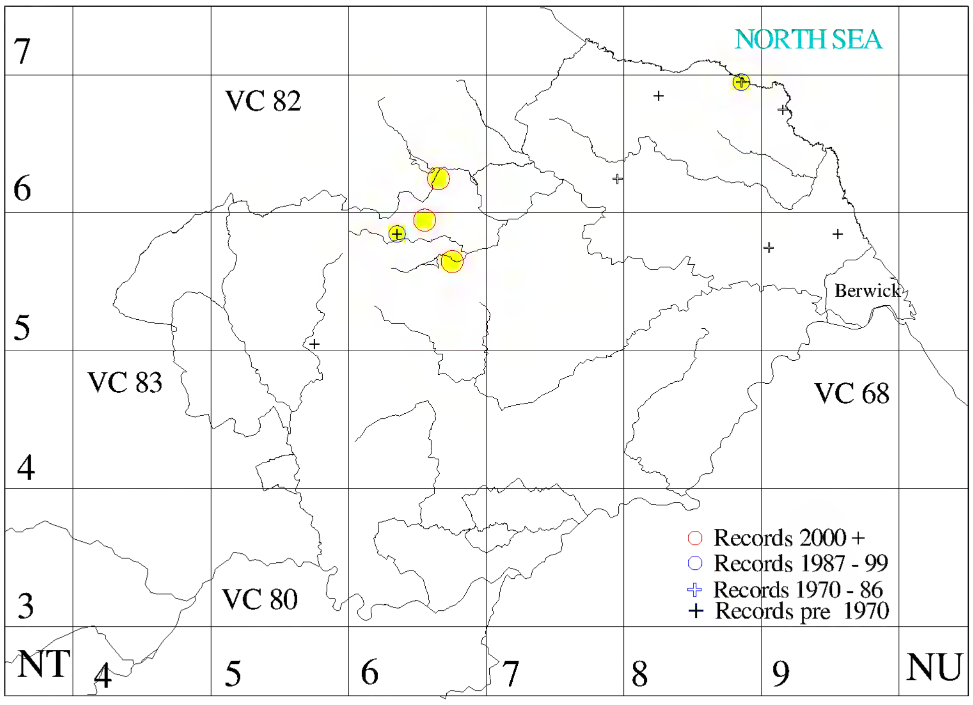
Twenty years ago it did indeed seem as if farmers had won their war against weeds, but today it seems more likely that further battles lie ahead as the weed flora adapts. New species are colonising cereal crops, mainly grasses that closely match the life-cycle of the host crop and are thus difficult to control. One such example is *Anisantha diandra* which often out-tops the crop. It has spread north in recent years from its British headquarters in East Anglia, reaching Berwickshire in 2007. It was frequent in a field at East Gordon 64 in 2007 and for 100m round the edge of oilseed rape near Blaikie Heugh 96 in 2010. It seems set to spread further.

Antennaria dioica Mountain Everlasting

Moorland, native, rare or scarce

Berwickshire 1987-2013	2¾ sites	2% tetrads	13% hectads
Britain 1987-1999		10% tetrads	21% hectads



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Antennaria dioica is a plant of rocky knowes in moorland in northern Britain.

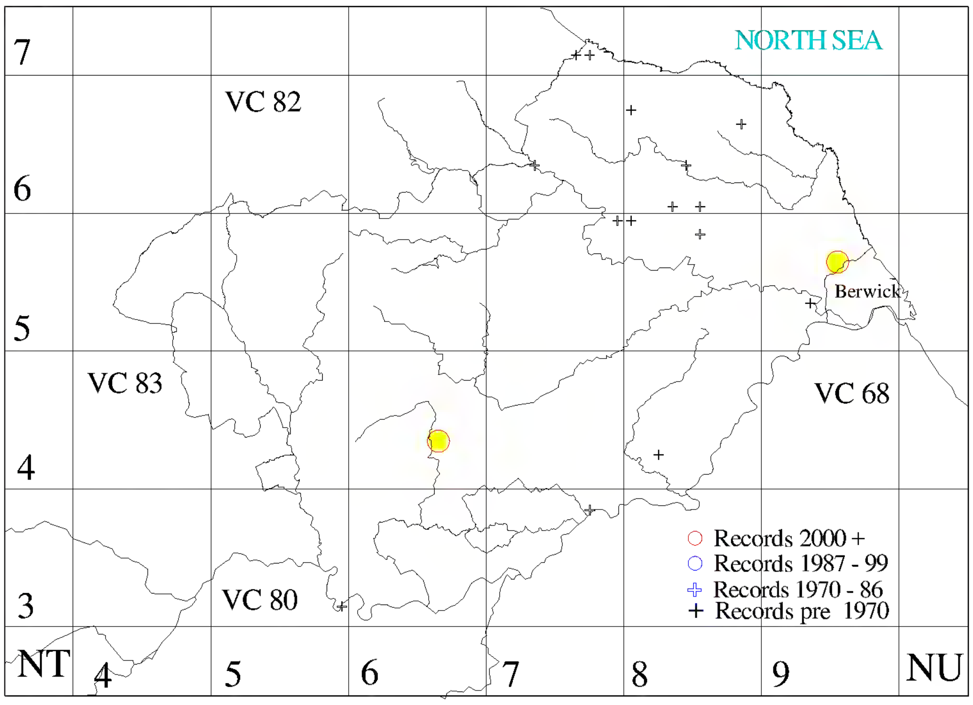
It is now rare in Berwickshire. Much of the moorland edge where it was formerly present has been reseeded leading to excess grazing pressure on the knowes where it grew.

The remaining colonies are on steep rocky banks by the Wester Burn at Horseupcleugh 65 with *Erica cinerea* Bell Heather and by the Watch Water between Rathburne and Watch Water Reservoir 65 with *Helianthemum nummularium* Common Rockrose. A few plants have also been seen in heather on a stony bank by the Killmade Burn 66.

Anthemis arvensis Corn Chamomile

Arable, extinct archaeophyte, sown but not naturalised, former rare or scarce

Berwickshire 1987-2013	0+1 sites	0.6% tetrads	9% hectads
Britain 1987-1999		2% tetrads	7% hectads



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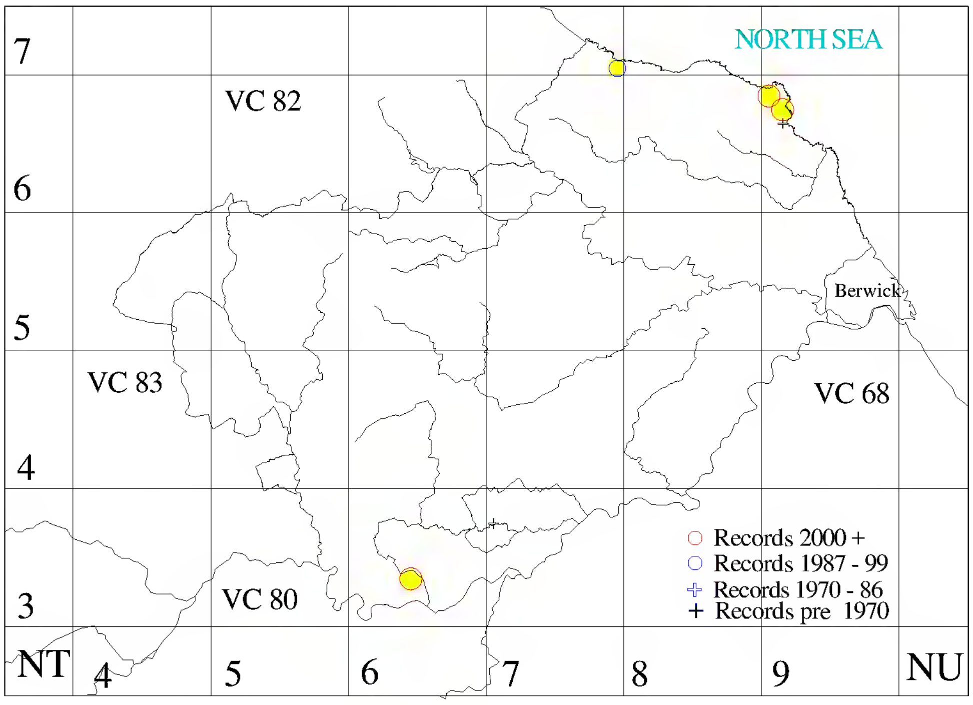
Anthemis arvensis is a rather scarce arable weed of light soils in the southeast of England and has been an infrequent introduction elsewhere.

The two recent records from Berwickshire have been of plants sown in a wildflower seed mix. One of these sites, that near Gordon 64, has now been put down to permanent grass. The other was in a conservation strip near Mordington House 95.

Anthriscus caucalis Bur Parsley

Grassland, native, rare or scarce

Berwickshire 1987-2013	3 sites	1% tetrads	13% hectads
Britain 1987-1999		6% tetrads	15% hectads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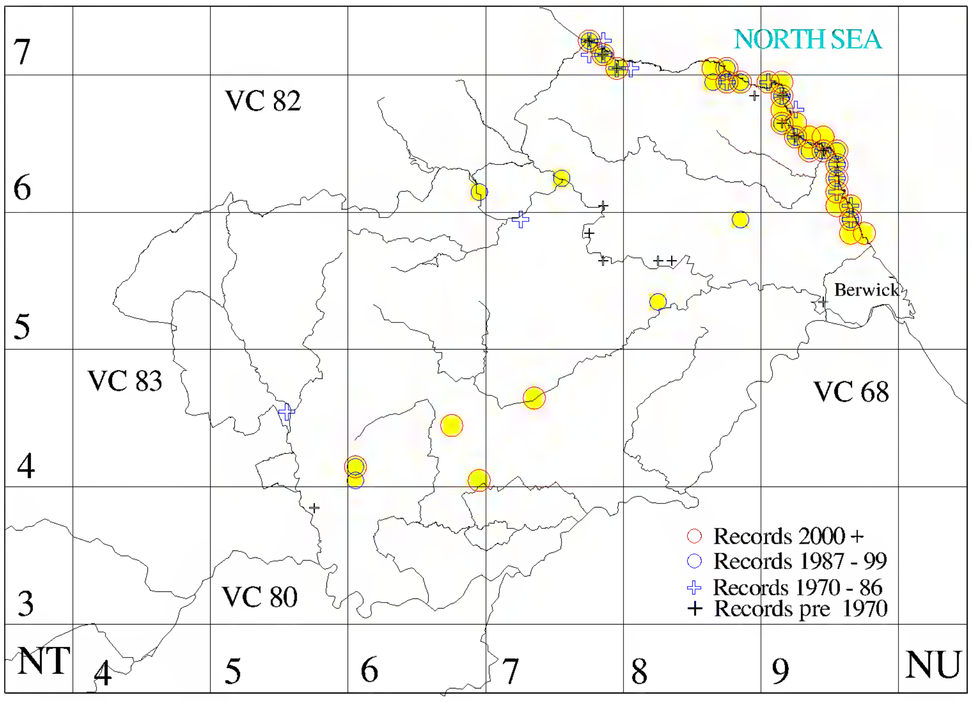
Anthriscus caucalis is found in sandy grassland, mainly in south-east Britain.

In 1853 it was considered ‘common’ in Berwickshire, but it is now very rare. However it has recently been seen in quantity in two arable fields near St Abbs Head 96. The record near Millfield 63 was of a single plant and a former site at Pease Bay 87 has been developed in connection with the caravan park.

Anthyllis vulneraria Kidney Vetch

Grassland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	6% tetrads	43% hectads
Britain 1987-1999		14% tetrads	48% hectads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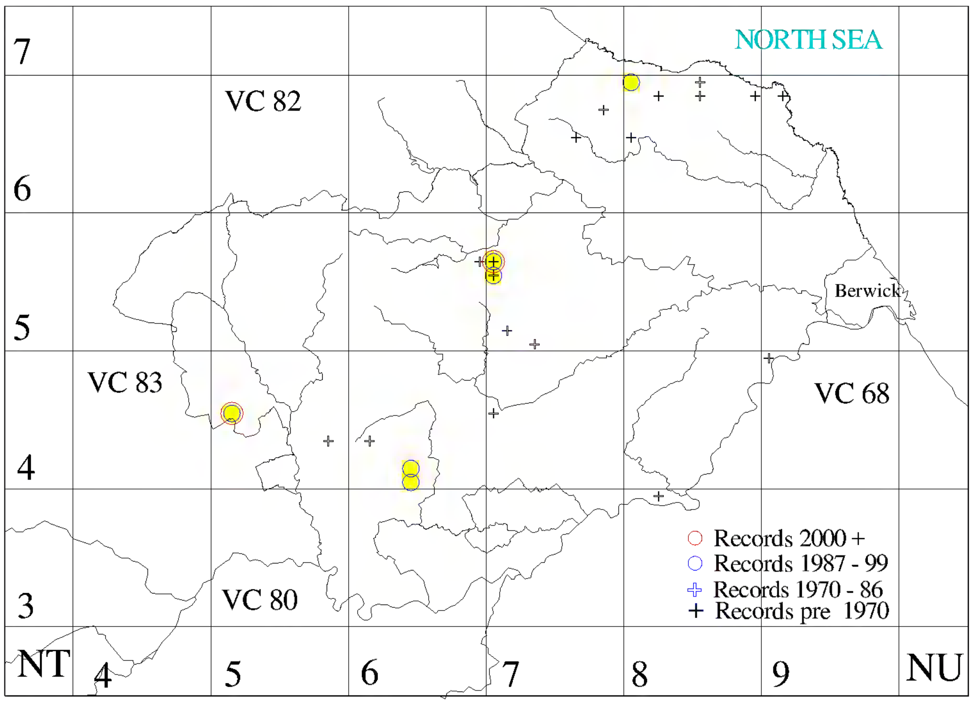
Anthyllis vulneraria is most frequent on calcareous soils, usually in rocky or sandy places and is widespread in Britain. In Berwickshire it is very largely restricted to the coast, especially on eroding sea braes. A few of the colonies are large. Inland it is rare, being known only at Hareheugh Craigs 64, knowes by the old railway near Lintmill Bridge 74 and in a couple of ruderal situations related to the line of the old railway. The former records by the Whiteadder Water relate to riverside shingle and scaurs.

This species has been mobile in the past, colonising along railway ballast and other ruderal habitats courtesy of other human activities as well as colonising down rivers on shingle, but this is apparently no longer the case. The reasons, apart from the closure of railways, are obscure.

Apium inundatum Lesser Marshwort

Aquatic, native, rare or scarce

Berwickshire 1987-2013	2¼ sites	2% tetrads	17% hectads
Britain 1987-1999		0.8% tetrads	5% hectads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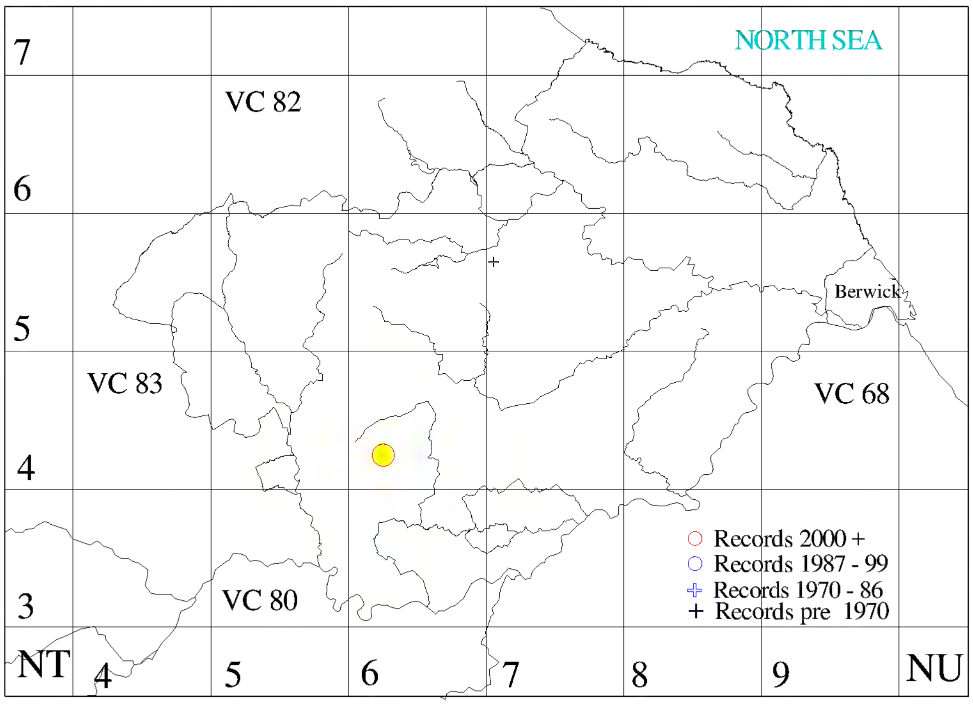
Apium inundatum is an aquatic plant of muddy pond margins and shallow running water that has a scattered distribution in Britain.

The remaining Berwickshire colonies are all more or less vulnerable as the surrounding habitat is changing, sometimes due to the exclusion of grazing as at Old Cambus Townhead 86. *A. inundatum* survives in a rivulet running through flushes near Dronshiel 75 and in the upper part of the Lauder Burn 54.

Apium nodiflorum Fool's-water-cress

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		39% tetrads	53% hectads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Apium nodiflorum is an aquatic plant which is widespread in England but is now rare in the Scottish Borders.

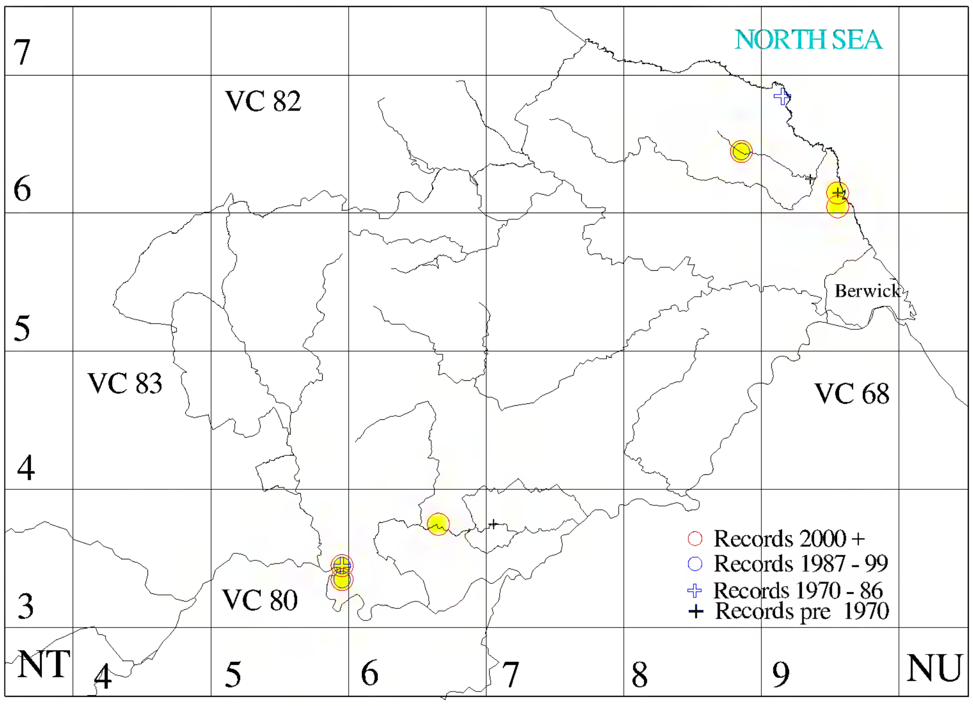
Some or all of the 1950+ records for Berwickshire in the 1962 *Atlas of the British Flora* are now known to have been errors for *Berula erecta* Lesser Water-parsnip. However, it was considered ‘frequent’ in 1853, the same epithet as was ascribed to *Berula.*

A small colony survives in a ditch to the west of Gordon Moss 64.

Arabis hirsuta Hairy Rock-cress

Grassland, native, rare or scarce

Berwickshire 1987-2013	5 sites	2% tetrads	17% hectads
Britain 1987-1999		5% tetrads	20% hectads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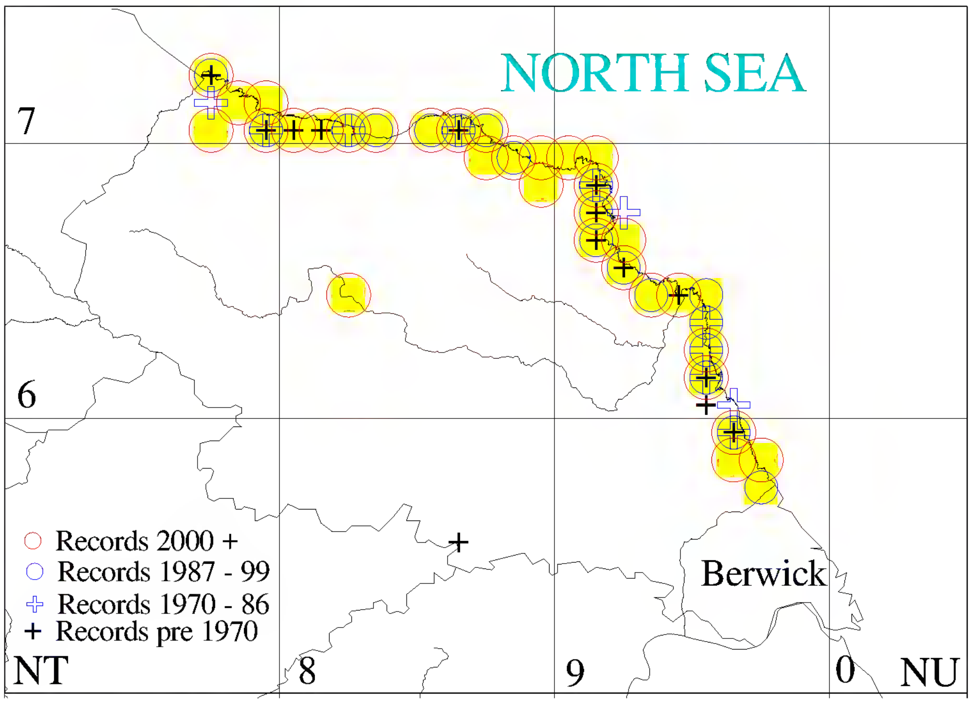
Arabis hirsuta is a plant of calcareous knowes and sandy grassland that is somewhat local in Britain.

It appears always to have been poorly represented in Berwickshire. It occurs in small quantity at Gaitheugh 53, in a gully at Muckle Thairn 63, at Chester Hill 96, on cliff ledges at Greenlaw Knowe 86 and on the sea braes at Burnmouth 96. The colony on a crumbling rock face at Chester Hill may be the largest, but it is still a modest one.

Armeria maritima Thrift

Coast, native, other axiophyte

Berwickshire 1987-2013	3% monads	5% tetrads	22% hectads
Britain 1987-1999		12% tetrads	37% hectads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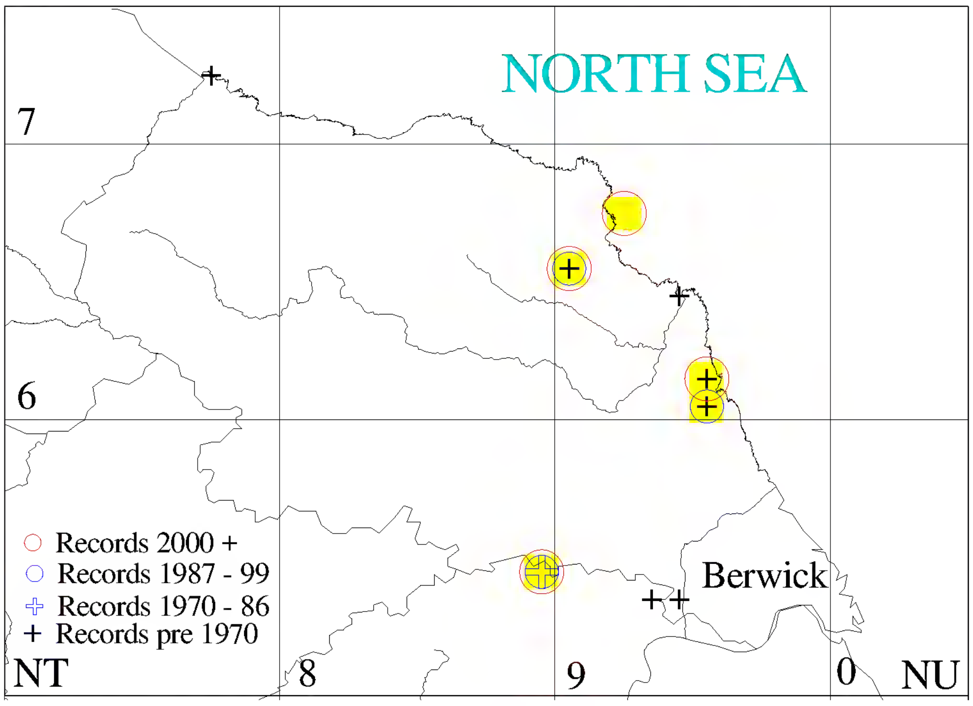
Armeria maritima is almost ubiquitous round the British coast and is also found as a montane species. In Berwickshire it grows all along the coastal strip, mainly on rocks and in rocky grassland facing the sea but also in the tiny fragments of saltmarsh. At St Abbs Head 96 it is abundant on knowes inland from the cliff top. A recent development is its spread to the sides of the A1 trunk road. It is as yet rare and sparse in this roadside habitat, being only known just north of the English Border and near Atton Dean 86.

There has been little change in its coastal habitat. The first record by roadsides was in 2005.

Artemisia absinthium Wormwood

Ruderal, archaeophyte, rare or scarce

Berwickshire 1987-2013	4¼ sites	1% tetrads	9% hectads
Britain 1987-1999		6% tetrads	20% hectads



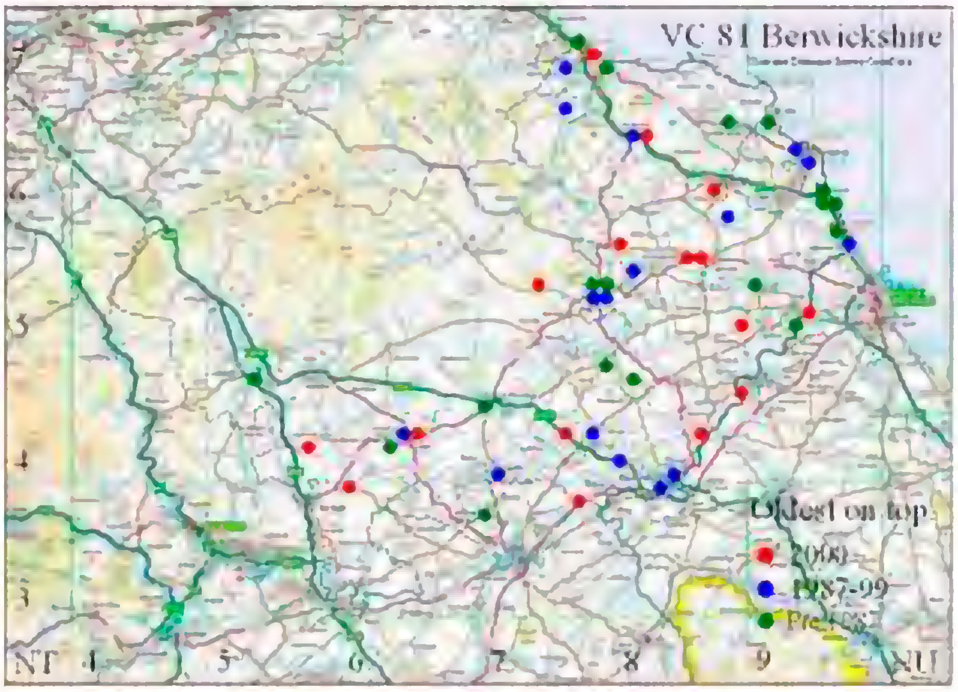
Artemisia absinthium is quite widespread in central England but scarce elsewhere. It survives around towns and villages where it was formerly cultivated for herbal use.

The colony on a rock outcrop at Coldingham Law 96 and in quite thick grass nearby is of historic interest in a Berwickshire context. It could quite conceivably date back to medicinal introductions by the friars of Coldingham Abbey. It is also still known near the shore at Burnmouth 96 and on a crag at the rear of a yard at St Abbs 96 but the former colony at the foot of a lane-side wall at Edington Mill 85 has almost died out following redevelopment.

Artemisia vulgaris Mugwort

Ruderal, archaeophyte

Berwickshire 1987-2013	3% monads	9% tetrads	61% hectads
Britain 1987-1999		66% tetrads	51% hectads



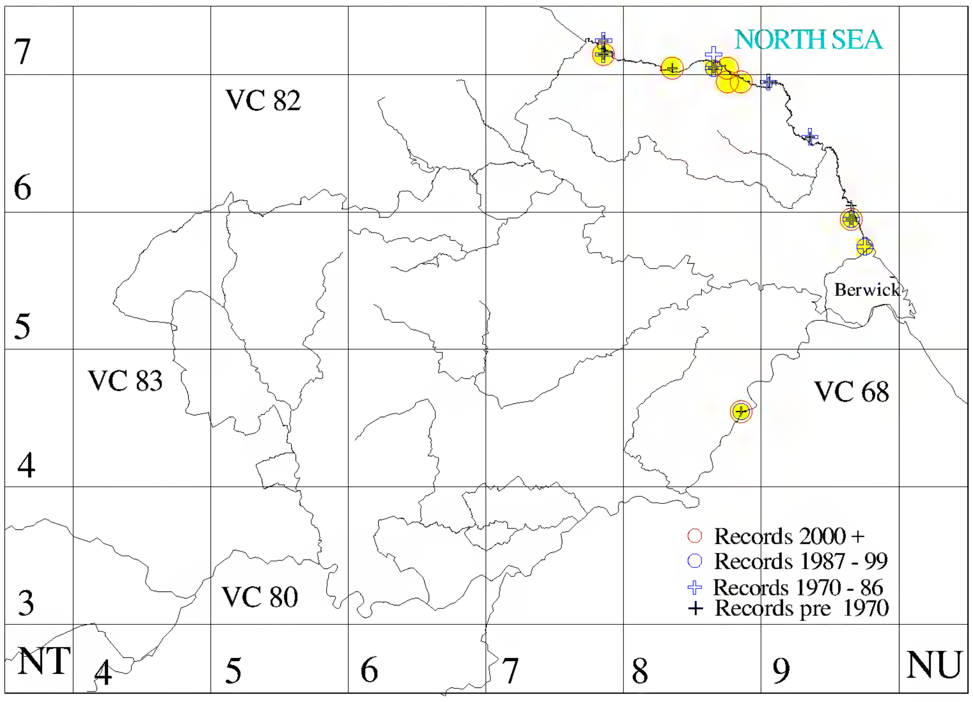
Artemisia vulgaris is very widespread in England but much less so in Scotland. It colonises disturbed ground, especially along roads.

This is quite a scarce species in Berwickshire and is nowhere frequent, not even by the A1 trunk road in the east. It prefers dry sunny places but is occasional by roads, around farm buildings and on banks by the River Tweed. It is not clear whether it has been increasing recently, as the records suggest, or whether the apparent spread is due to more intensive survey of ruderal habitats.

Asplenium marinum Sea Spleenwort

Coast, native, Berwickshire fine

Berwickshire 1987-2013	0.8% monads	2% tetrads	22% hectads
Britain 1987-1999		3% tetrads	15% hectads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Asplenium marinum is a frost-sensitive species almost restricted to coastal rocks. It is much commoner on the west coast of Britain and the Berwickshire colonies are remarkable for the east coast, emphasising the interest of this rocky coastline. The colonies are situated on cliffs subject to sea spray and on sea stacs. This habitat is so inaccessible that the full distribution is unknown.

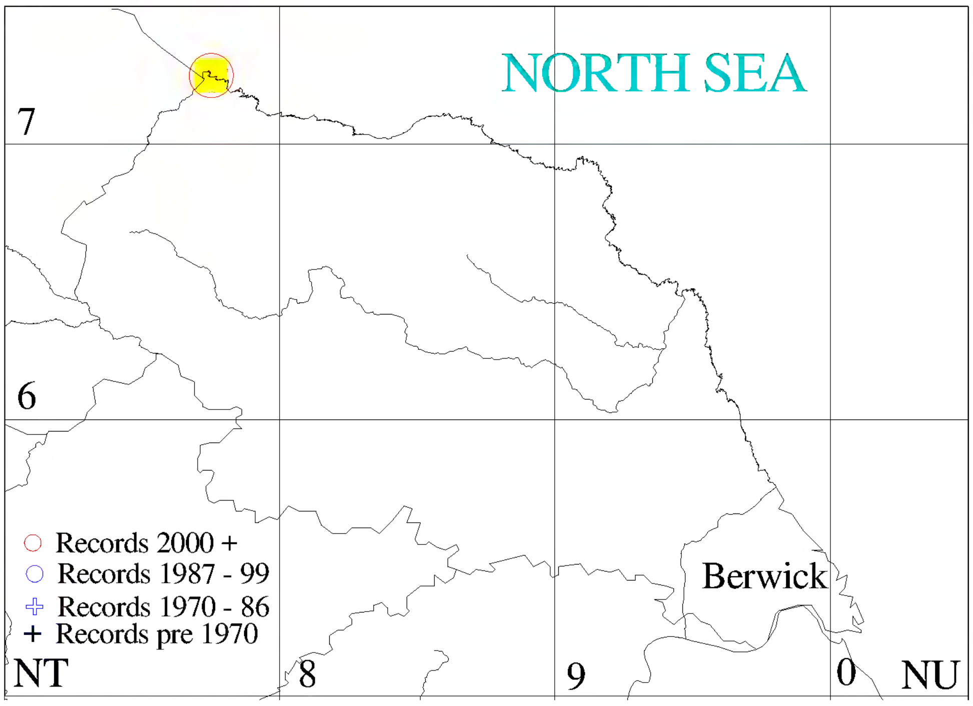
The colony by the River Tweed near Ladykirk House 84 has been known since 1838 in over-hung crevices in a massive south-facing sandstone exposure, fully 10km from the sea. The sandstone may act as a heat store protecting the fern from frosts in a microhabitat within the crevices where it grows. The colony is under threat from ivy and some remedial action has been taken recently.

Colonies at Petticowick, St Abbs Head 96 and Callercove Point, Eyemouth 96 have not been refound recently and may be losses. Some degree of mobility is suspected with a few colonies being lost to rock falls and new ones colonising.

Aster tripolium Sea Aster

Coast, coastal casual, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		5% tetrads	20% hectads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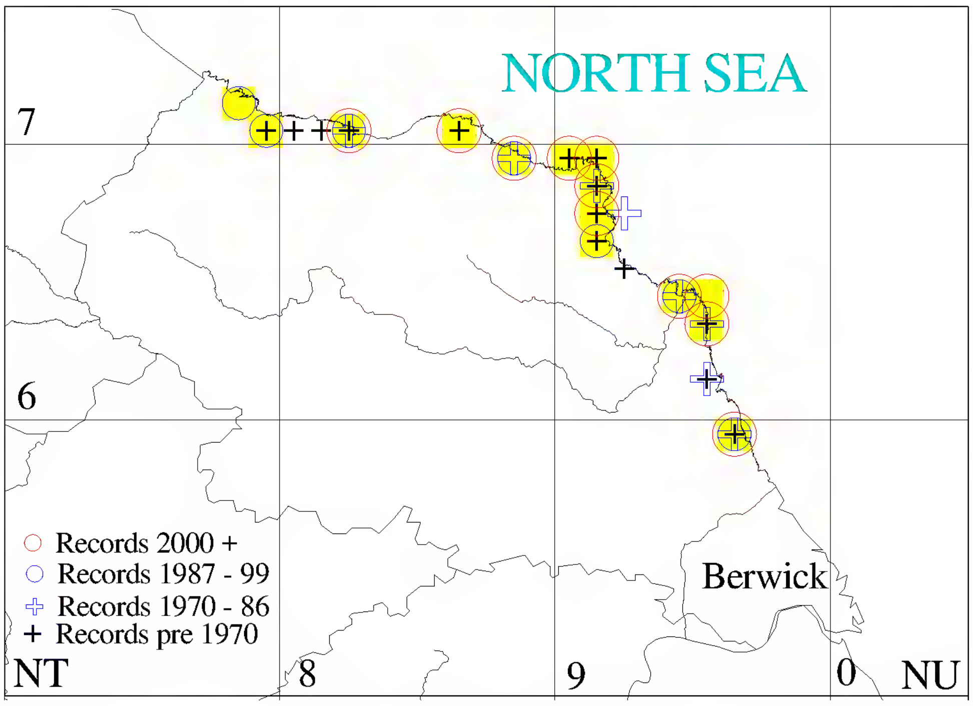
Aster tripolium is very widespread all round the British coast in saltmarshes and muddy sea banks.

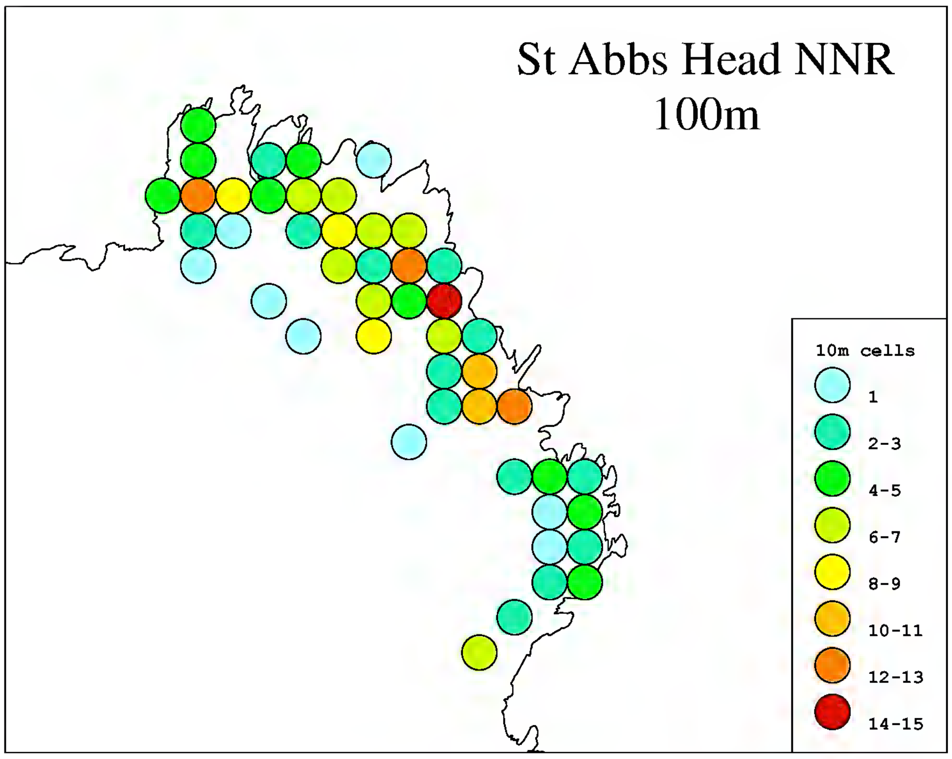
It had not been recorded from Berwickshire for want of suitable habitat until one plant was found in 2009 at the back of the beach at Ramsheugh Bay 77. The habitat there is marginal for this species and it must be provisionally considered a casual.

Astragalus danicus Purple Milk-vetch

Coast, native, rare or scarce

Berwickshire 1987-2013	8½ sites	2% tetrads	22% hectads
Britain 1987-1999		0.7% tetrads	5% hectads





Astragalus danicus is near-scarce in Britain. It grows on coastal calcareous grassland in the north and limestone in the south.

In Berwickshire it is scattered along the coast but almost all the populations are tiny ones at the cliff edge. Many have died out due to lack of grazing on the sea braes and reseeding around knowes where it grew in fields a little back from the cliffs, leading to eutropication of the knowes.

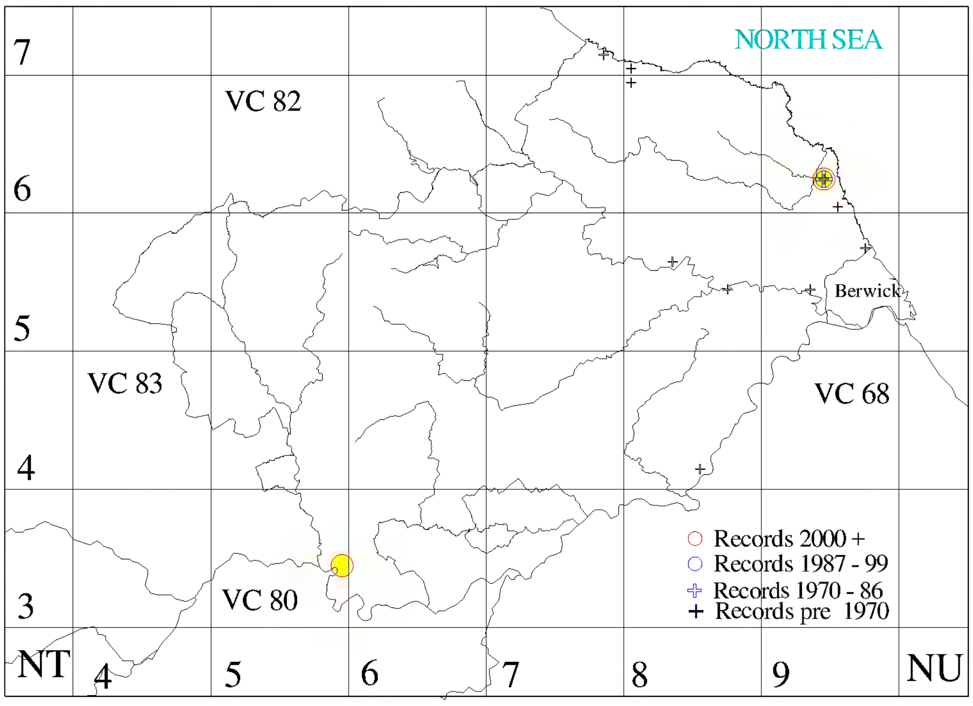
The marvellous exception is at St Abbs Head 96 where the *Astragalus* thrives both at the cliff edge and on knowes several hundred metres inland. The part of this population between Petticowick 908690 and Horsecastle Bay 917685 was surveyed in detail on 2 June 2004. The plants were just coming into full flower and were being visited very actively by bumblebees. Presence in almost 200 10x10m grid cells was recorded. Half the population is at the cliff edge where 30% of the available 10m strips are colonised, sometimes abundantly. Away from the cliffs many of the knowes are colonised, sometimes sparingly, in short grass or around rocks. About 2% of the land area away from the cliff edge is colonised at 10x10m scale. A further survey from Horsecastle Bay 917685 to Starney Bay 916676 was made on 18 June 2004. The plants were already in seed. Plants away from the cliff edge had frequently not flowered, probably where they were affected by drought. Presence in 30 10x10m grid cells was recorded. Three-quarters of the population is at the cliff edge where 15% of the available 10m strips are colonised. No plants were recorded south of Halterem's Loup 916679. Away from the cliffs suitable knowes are only found at Horsecastle 918684: these are quite well colonised.

Away from St Abbs Head, the best population is along the coast at Gunsgreen 96. There are a few small patches on the cliff edge near Fastcastle 87.

Astragalus glycyphyllos Wild Liquorice

Grassland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		2% tetrads	7% hectads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Astragalus glycyphyllos is near-scarce in Britain and is most frequent on calcareous soils in central England. It grows in scrubby grassland and woodland glades.

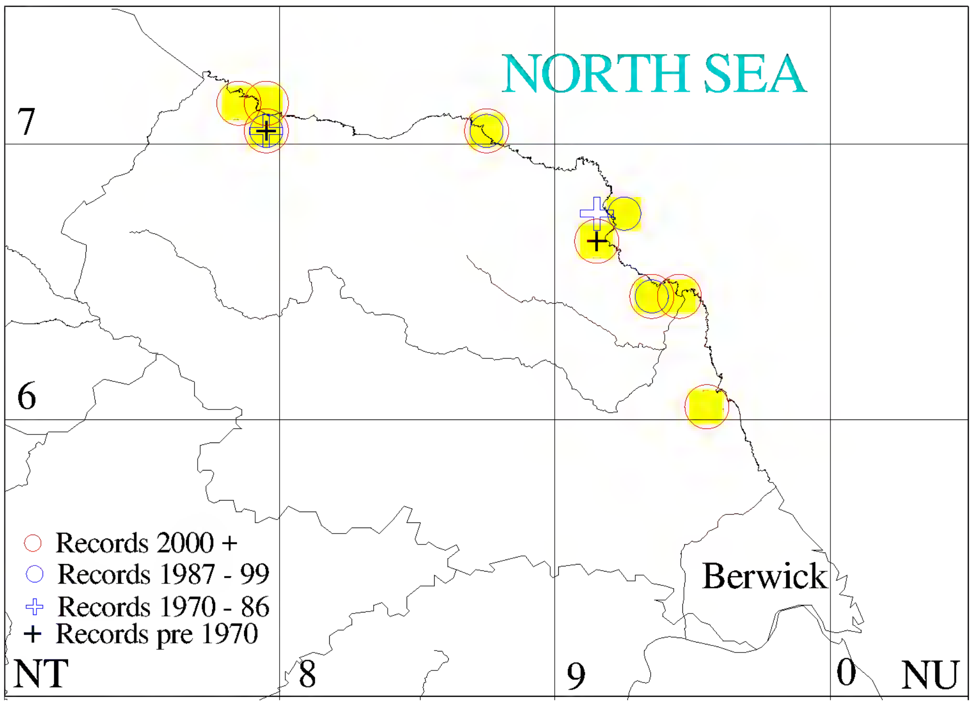
In Berwickshire there is a strong colony of about ten clumps near the junction of the Ale and Eye Waters 96 on a steep scrubby bank with *Thalictrum minus* Lesser Meadow-rue as an associate. A second site with a single clump has recently been discovered at Gaitheugh 53. The *Thalictrum* is also present at this site, but not as a close associate.

There have been losses in the past and neither of the existing populations is particularly secure.

Atriplex laciniata Frosted Orache

Coast, native, rare or scarce

Berwickshire 1987-2013	7½ sites	2% tetrads	13% hectads
Britain 1987-1999		2% tetrads	10% hectads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Atriplex laciniata is widespread round the British coast on sandy beaches but is rather local and many populations are small.

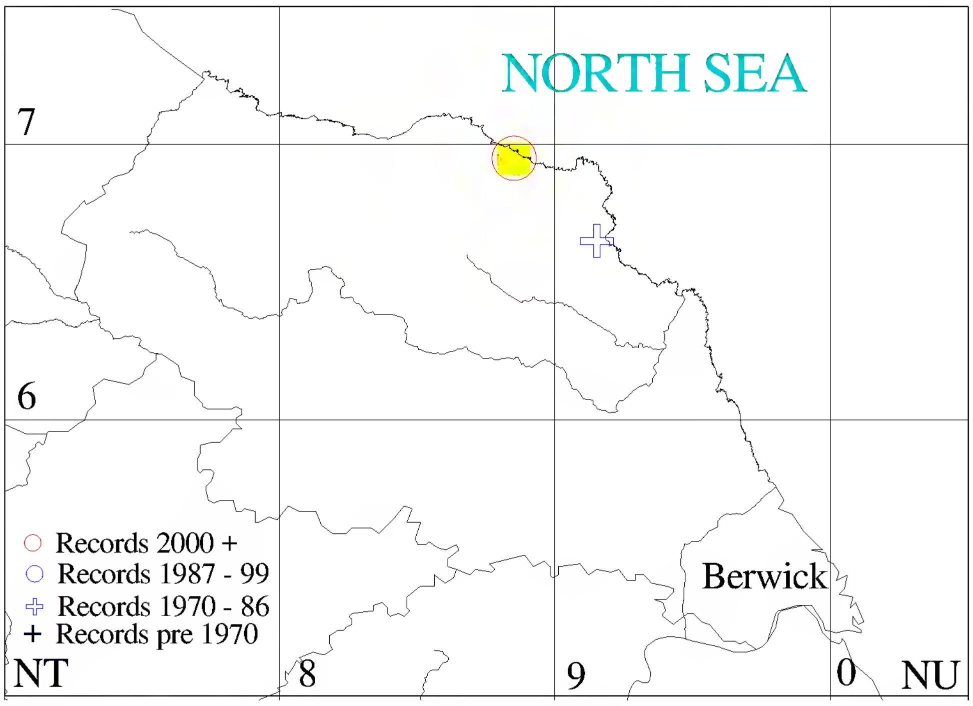
Its scarcity in Berwickshire relates to the rocky nature of the coastline. All the colonies are small and somewhat vulnerable, with a cycle of local extinction and re-colonisation.

Sites include Cove 77, Pease Bay 77, Coldingham Bay 96, Hairy Ness and Killiedraught Bay near Eyemouth 96. It was plentiful on the beach in Eyemouth itself in 2010.

Atriplex x taschereaui = A. glabriuscula x longipes Taschereau's Orache

Coast, coastal casual, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.2% tetrads	1% hectads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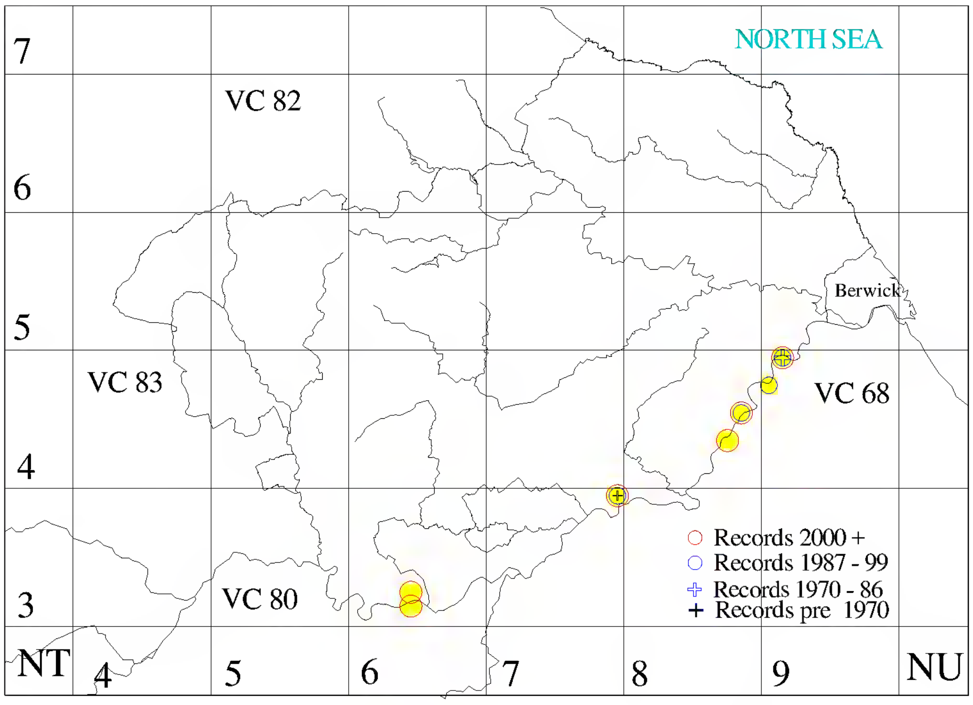
Atriplex longipes and this hybrid with *A. glabriuscula* are scarce on beaches on the English coast. The hybrid is fertile and is more widespread than *A. longipes*.

The hybrid is more or less casual in Berwickshire and no longer appears to be present at the back of the beach at Coldingham Bay 96, where it was found in *Ammophila* Marram in 1977. It has been seen recently at the drift line on a shingle beach below Westerside Dean 86.

Ballota nigra Black Horehound

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	6 sites	2% tetrads	17% hectads
Britain 1987-1999		28% tetrads	43% hectads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Ballota nigra is very widespread in England but scarce in Scotland. It is often found as a ruderal, especially round ruined buildings.

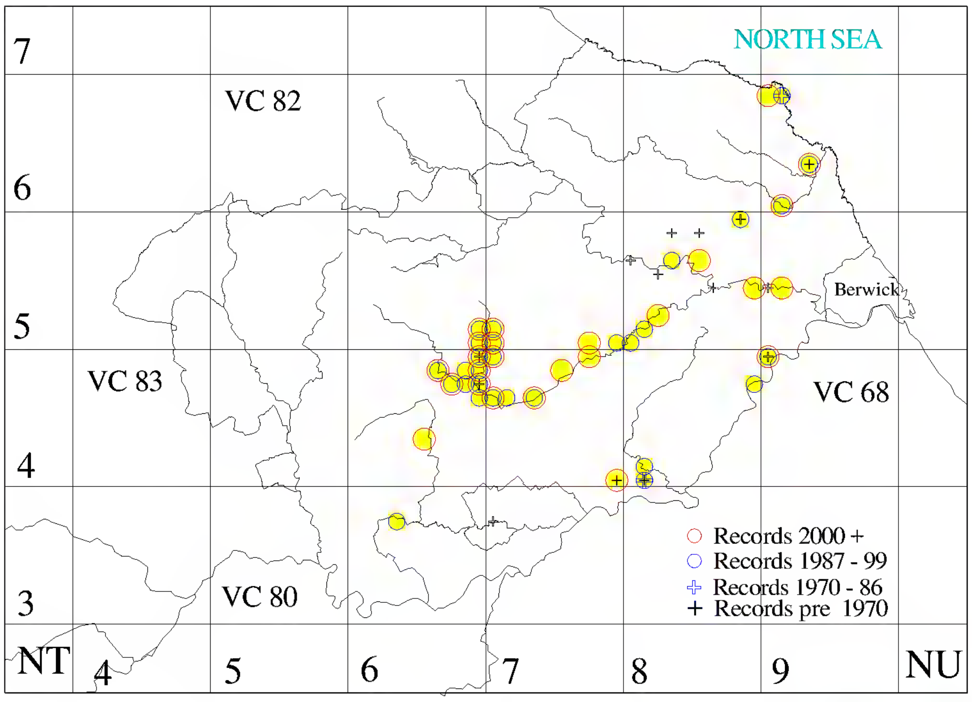
The Berwickshire colonies are of some historic interest. Some are long-established and quite large, as at the foot of sandstone rocks near Ladykirk House 84, Blount Bank 94 and below Fishwick Mains 94. *Ballota nigra* is also a member of a remarkable assemblage of herbal plants on an eroding bank at Dalcove 63 where it is associated with *Hyoscyamus niger* Henbane.

George Johnston (1853) records: ‘May 9, 1851. Saw an old man gathering the *Ballota*. He called it the Horehound, and said that he mixed the dried herb with his tea, believing it to be a wholesome addition. He expressed a firm belief in its anti-asthmatic virtue’. This would have been in Berwick upon Tweed 95, where *Ballota* still grows by a favoured walk near the river.

Berula erecta Lesser Water-parsnip

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	43% hectads
Britain 1987-1999		7% tetrads	29% hectads



Berula erecta is widespread but local in England but rather scarce in Scotland. In Berwickshire it is notably frequent and luxuriant in the Fangrist Burn and the upper Blackadder Water where it reaches an altitude of 200m. Here the flow is relatively gentle and the bottoms muddy or gravelly, a combination which enables a notably rich flora. Further downstream this species is infrequent, occurring as more or less casual plants amongst boulders where one suspects fragments brought down from above to have lodged. Some of the colonies by the Blackadder, and many of the more scattered occurrences, are in old millstreams, oxbow ponds and the like. *Berula* may survive the canalisation of lowland burns, but seldom thrives and the deep ditches are a difficult habitat to record.

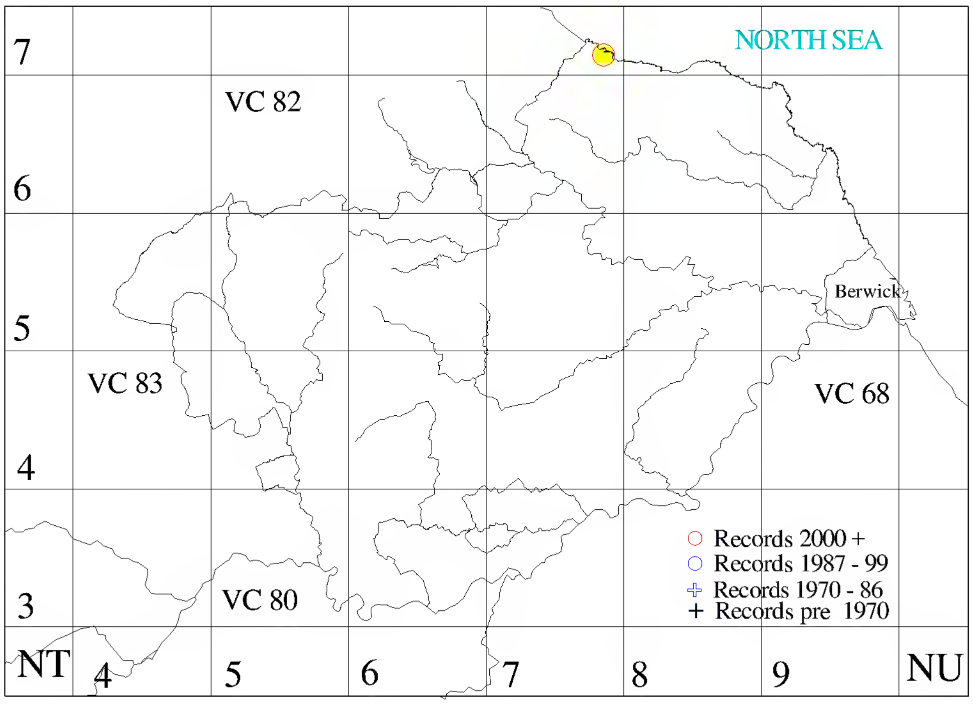
Colonisation appears to be by vegetative fragments. There is no evidence of recent colonisation by seed.

Berula erecta in a species-rich stretch of the upper Blackadder Water 1993

Beta vulgaris subsp. maritima Sea Beet

Coast, coastal casual, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		4% tetrads	16% hectads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+ Records pre 1970

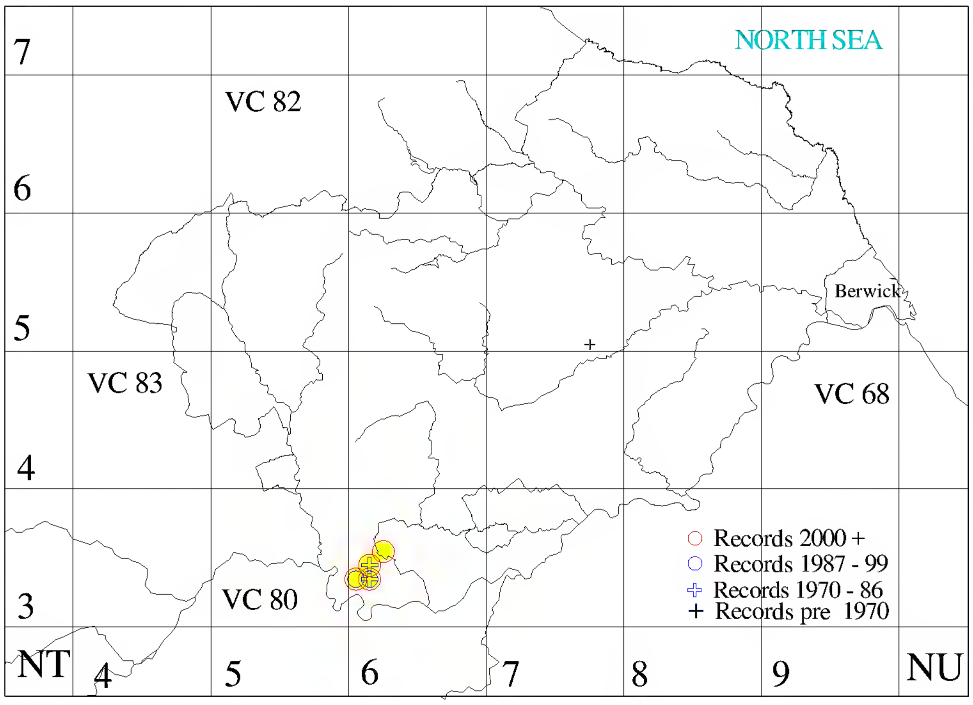
Beta vulgaris subsp. maritima is widespread round much of the British coast but is scarce in Scotland. It favours nutrient-rich situations at the back of beaches and under cliffs.

The only Berwickshire record was in 2009 when a single strong plant was found at Pease Bay 77 at the back of a relatively secluded part of the beach.

Bidens cernua Nodding Bur-marigold

Aquatic, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.9% tetrads	4% hectads
Britain 1987-1999		5% tetrads	18% hectads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Bidens cernua is relatively widespread in England but rather scarce in Scotland. It favours pond margins.

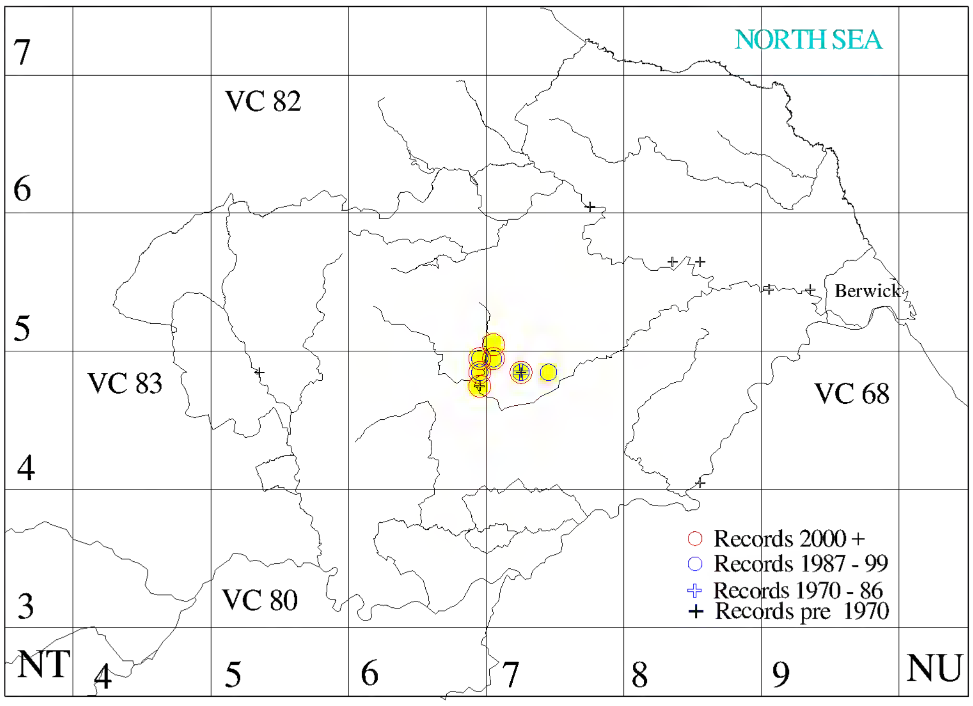
There are two colonies in Berwickshire. Much the largest is at Bemersyde Moss 63, where it was surveyed in 2002. Much of the north bank was open to cattle. The *Bidens* was found there in two main colonies. The first with about 316 plants extended for 300m at the west end of the moss. It fell partly at the water's edge in the grazed field and partly behind a fence, both around a pool and in open fen. The second was about halfway along the north bank, again partly in the grazed field and partly in an ungrazed strip. About 26 plants were growing at the water's edge. The south side was much overhung by scrub and only 13 plants were found, but access was restricted. The modest quantity of *Alisma plantago-aquatica* Water-plantain and the more plentiful *Veronica anagallis-aquatica* Blue Water-speedwell were strongly associated with the *Bidens*.

The Whitrig Pond colony nearby may have colonised recently. Here *Bidens* was present in 2003 in three 10x10m grid cells.

Blysmus compressus Flat-sedge

Wetland, native, rare or scarce

Berwickshire 1987-2013	5 sites	2% tetrads	13% hectads
Britain 1987-1999		0.6% tetrads	5% hectads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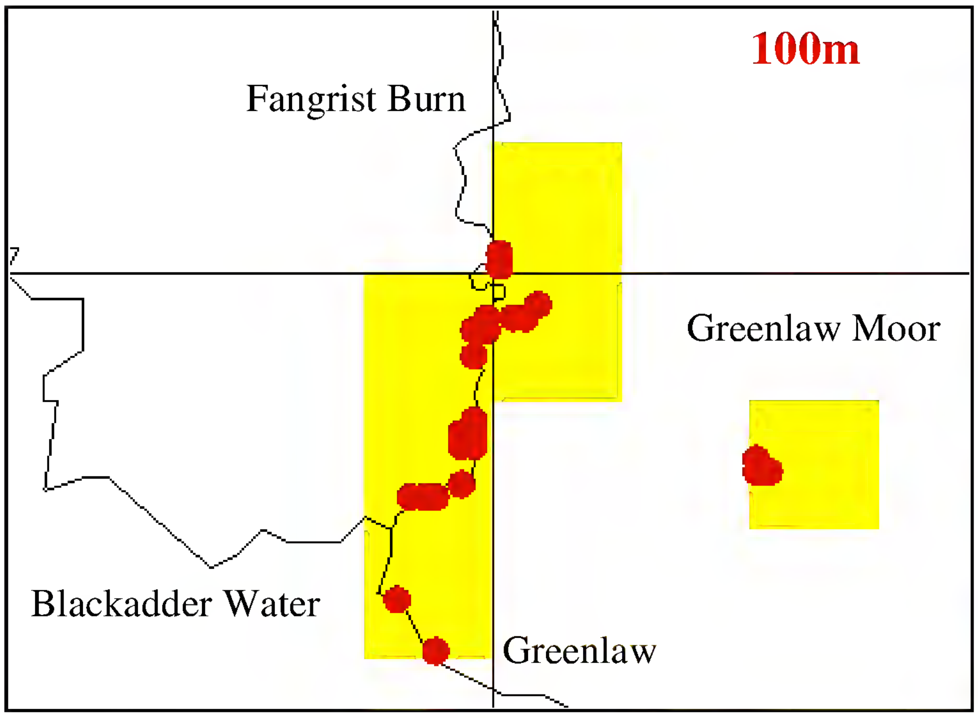
100m
Fangrist Burn
Greenlaw Moor
Blackadder Water
Greenlaw
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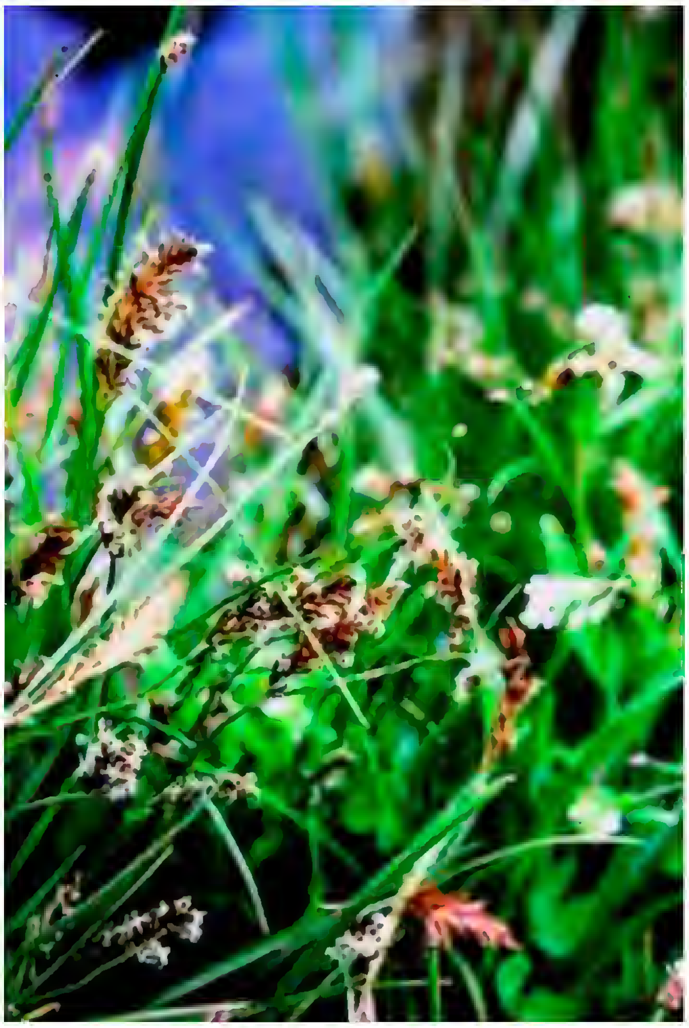
Blysmus compressus is scarce in Britain where its distribution is concentrated in the north Pennines. It is a distinctive sedge of lowland calcareous flushes and riverside haughs subject to flooding.

Histoically this sedge has suffered a steep decline in Berwickshire due to the drainage and ploughing of haughs by the Leader and Whiteadder Waters but fine colonies remain along the Fangrist Burn 64, 65, 75 continuing into Greenlaw Dean 64, with an outlying colony by Flourishwalls Burn on Greenlaw Moor 75.

Many of the burnside colonies occur on small grassy bryophyte-rich ledges just above the normal level of the burn, but others are in flushes away from the burn where its associates include *Briza media* Quaking-grass, *Eriophorum latifolium* Broad-leaved Cottongrass, *Pinguicula vulgaris* Butterwort and *Selaginella selaginoides* Lesser Clubmoss.

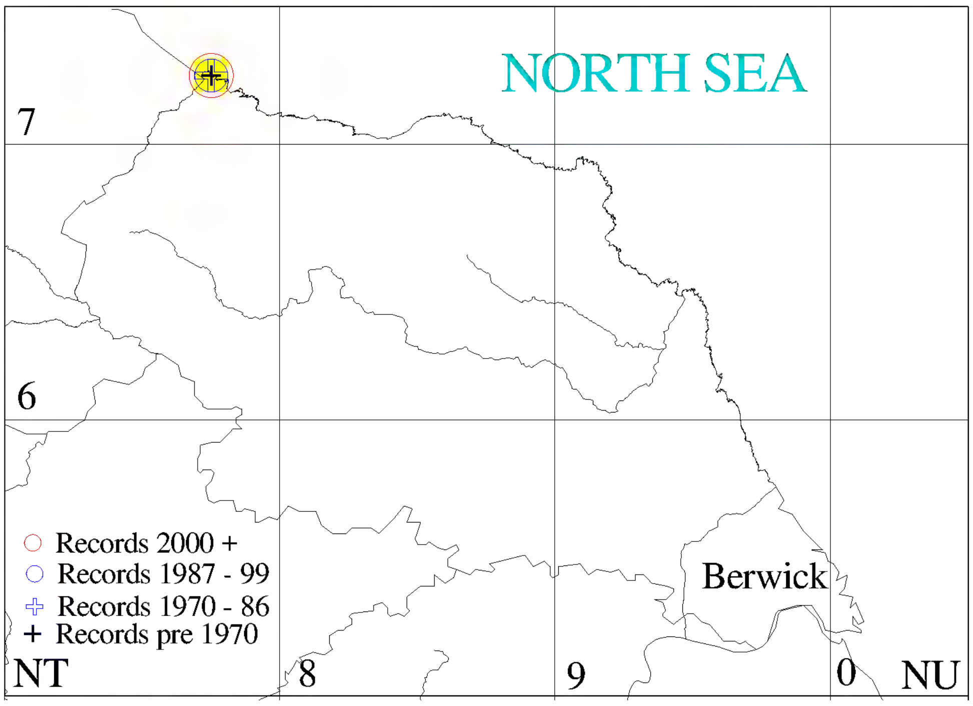


***Blysmus compressus* Greenlaw Dean 2000**

Blysmus rufus Saltmarsh Flat-sedge

Coast, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		1% tetrads	7% hectads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○ Records 2000 +
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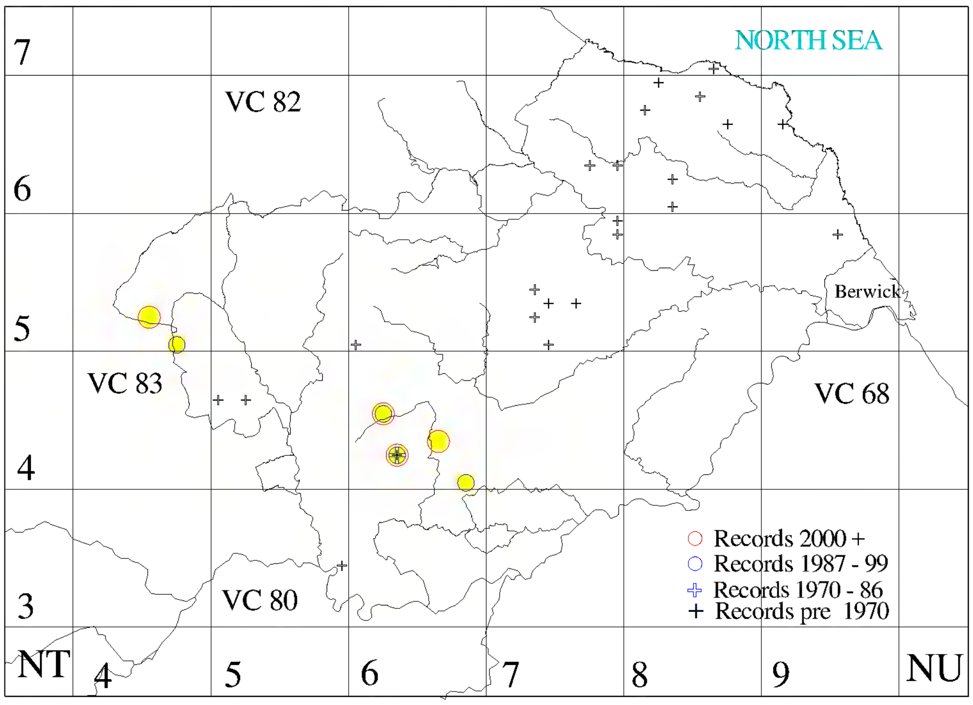
Blysmus rufus is widespread in saltmarshes on the west coast of Scotland but is scarce in the east and its distribution does not extend far into England.

Saltmarsh is almost nonexistent in Berwickshire, so it is not unexpected that the only colony is a small one at Ramsheugh Bay 77 where it grows with *Carex extensa* Long-bracted Sedge and *Glaux maritima* Sea-milkwort.

Botrychium lunaria Moonwort

Grassland, native, rare or scarce

Berwickshire 1987-2013	4¼ sites	2% tetrads	9% hectads
Britain 1987-1999		3% tetrads	19% hectads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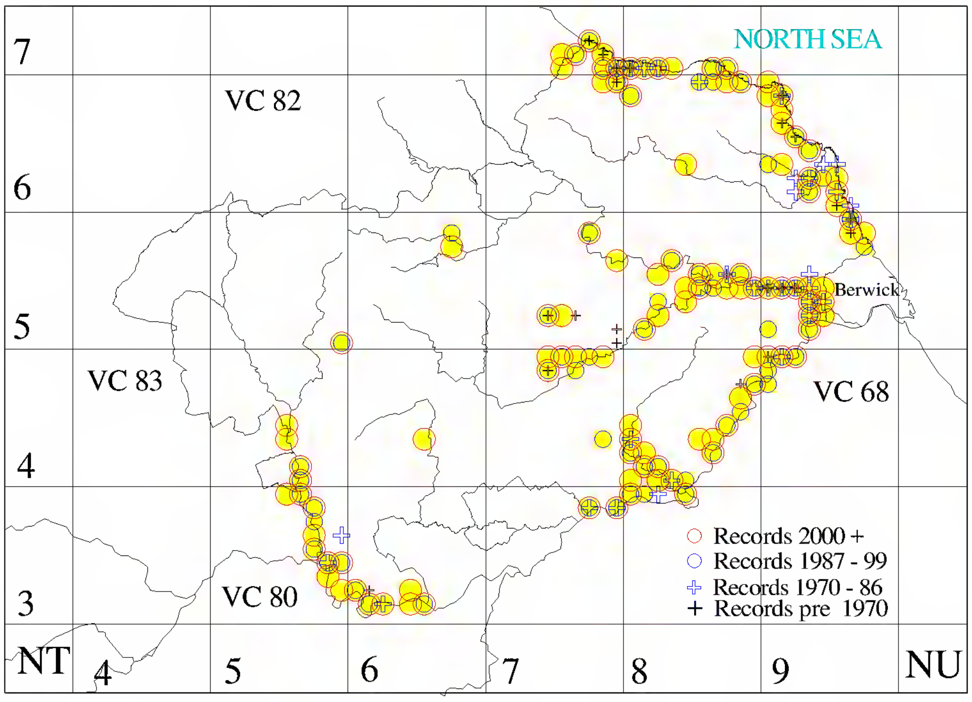
Botrychium lunaria is quite widespread in calcareous grassland in northern Britain but is localised and many populations are small.

Most of the historical sites in Berwickshire have been ploughed or planted. The remaining sites are all vulnerable. They are near Threeburnford 45, on the old railway at Gordon Moss 64, on a mound in Corsbie Fen 64 and under recently planted trees in Gordon Community Woodland 64. The last record from Hareheugh Craigs 64 was in 1991 when three fronds were seen on a rocky ledge.

Brachypodium sylvaticum False-brome

Woodland, native, other axiophyte

Berwickshire 1987-2013	11% monads	23% tetrads	83% hectads
Britain 1987-1999		53% tetrads	74% hectads



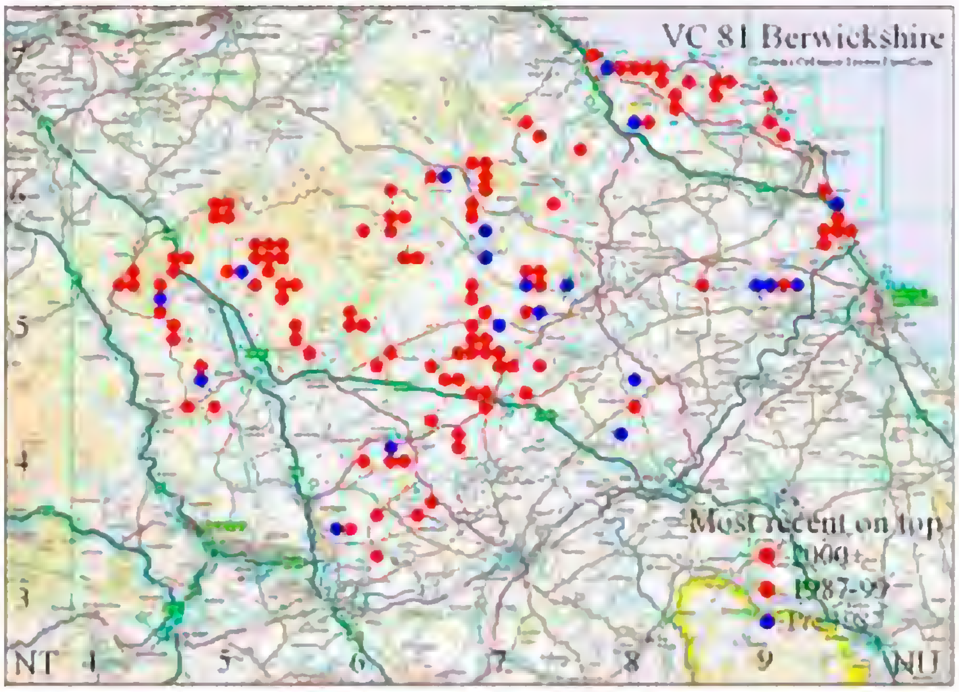
Brachypodium sylvaticum is very widespread in England and Wales but more local in Scotland. Although primarily a grass of dry woodland that is at least slightly calcareous, it is as often found on dry banks that may have been wooded in the past and it is here that it may become dominant over quite large areas. These attributes make it one of the few winners from the history of disturbance in Berwickshire's woodlands and it finds suitable habitat all along the coast and the lower parts of the river system. It shuns oakwoods on acidic soils and thus has a distribution that contrasts very sharply with that of *Anemone nemorosa* Wood Anemone.

This is a species that colonises freely after disturbance within the sites where it is present but is limited by its habitat requirements from colonising recently planted woodland. Its distribution is very stable.

Briza media Quaking-grass

Grassland, native, other axiophyte

Berwickshire 1987-2013	10% monads	25% tetrads	83% hectads
Britain 1987-1999		28% tetrads	54% hectads



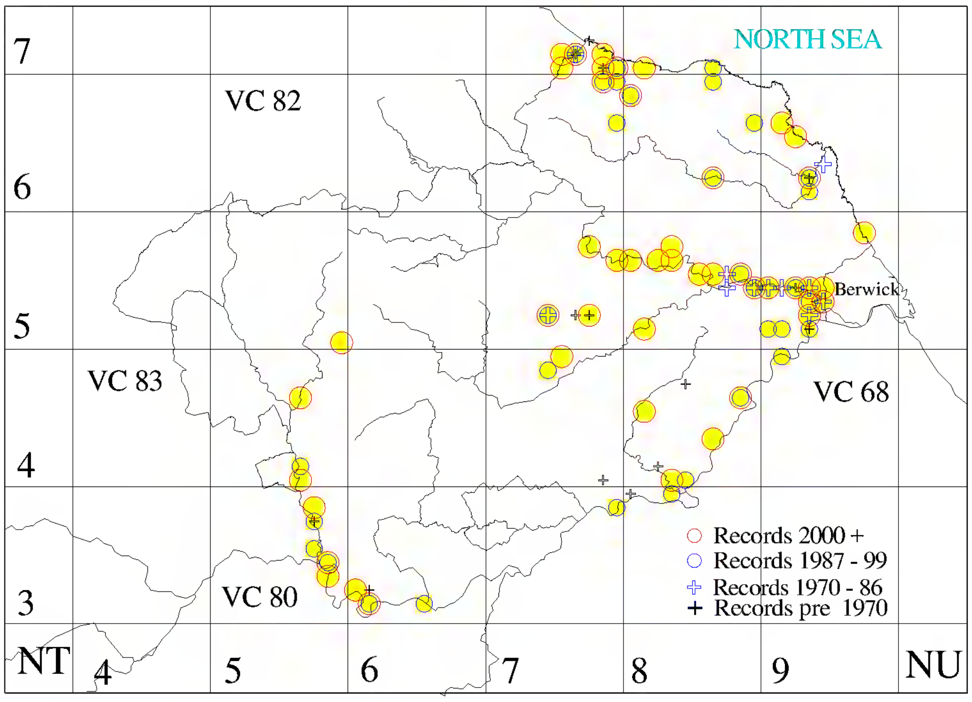
Briza media is a widespread grass, except in the north of Scotland. Nationally it is most frequent in dry calcareous grassland and it may be found in this habitat on the Berwickshire coast. However it has another habitat in base-rich flushes and this is where most of the Berwickshire colonies are situated. In working hill country and entering an area of flushes, the distinctive flowering heads of *Briza* are often an early indication that a more species-rich area is at hand.

More intensive survey has extended our knowledge of this species' distribution in recent years so there is little evidence of its likely slow decline. There is no evidence of the recent colonisation of new localities.

Bromopsis ramosa Hairy Brome

Woodland, native, other axiophyte

Berwickshire 1987-2013 5% monads 15% tetrads 74% hectads
Britain 1987-1999 38% tetrads 58% hectads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+ Records 1970 - 86
+ Records pre 1970

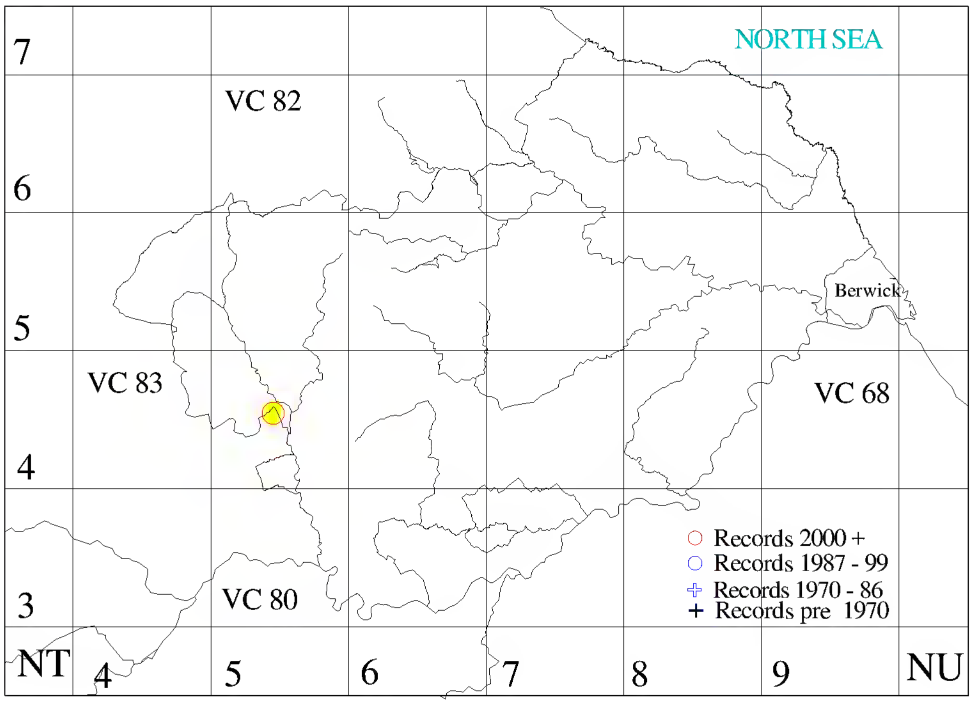
Bromopsis ramosa is a woodland grass that is widespread in England and Wales but local in Scotland. It has similar soil requirements to *Brachypodium sylvaticum* False-brome with which it often grows but is much less competitive and requires shade. As a result it is all but absent on the coast and by the River Tweed but remains very frequent in woodland by the lower Whiteadder Water.

This is a species that colonises fairly freely after woodland disturbance within the sites where it is present but is limited by its habitat requirements from colonising recently planted woodland. Some modest recent decline is suspected.

Bromus commutatus Meadow Brome

Arable, extinct archaeophyte, reintroduced and naturalised, former rare or scarce

Berwickshire 1987-2013 0+1 sites 0.3% tetrads 4% hectads
Britain 1987-1999 9% tetrads 18% hectads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○ Records 2000 +
○ Records 1987 - 99
+ Records 1970 - 86
+ Records pre 1970

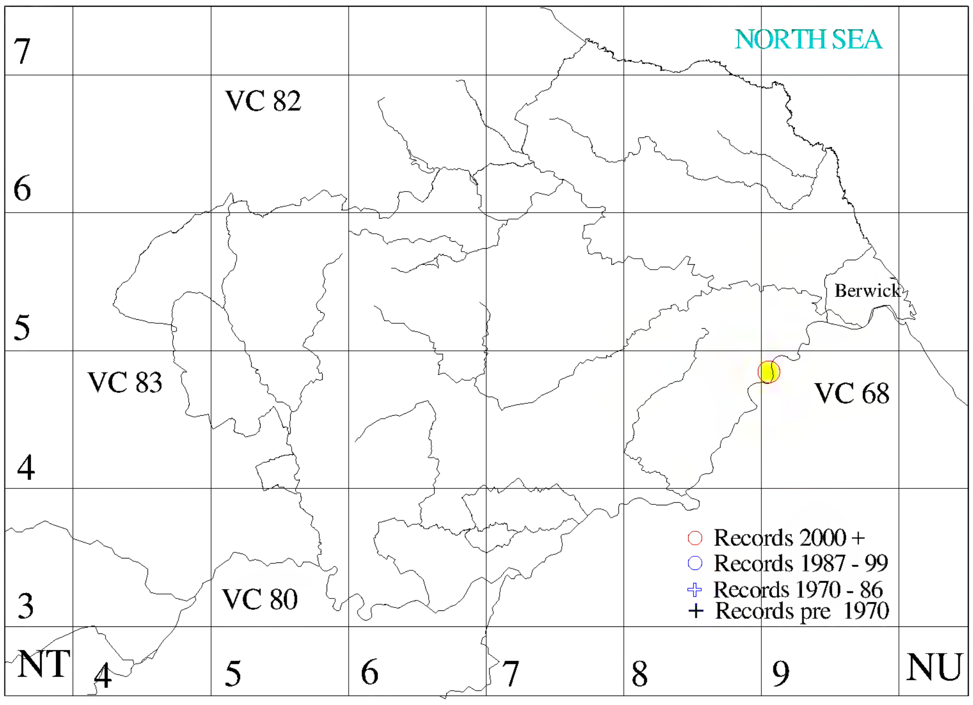
Bromus commutatus is widespread in meadows and other grassy places in southeast England but is a largely casual introduction elsewhere.

The one confirmed Berwickshire record is as a cornfield weed at the foot of the Milsie Burn near Blainslie 45 where it was quite plentiful in 2007. There are old records for *B. racemosus* Smooth Brome which could relate to this species.

Bromus secalinus Rye Brome

Arable, extinct archaeophyte, reintroduced and naturalised, former rare or scarce

Berwickshire 1987-2013	0+1 sites	0.3% tetrads	4% hectads
Britain 1987-1999		0.5% tetrads	3% hectads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Records pre 1970
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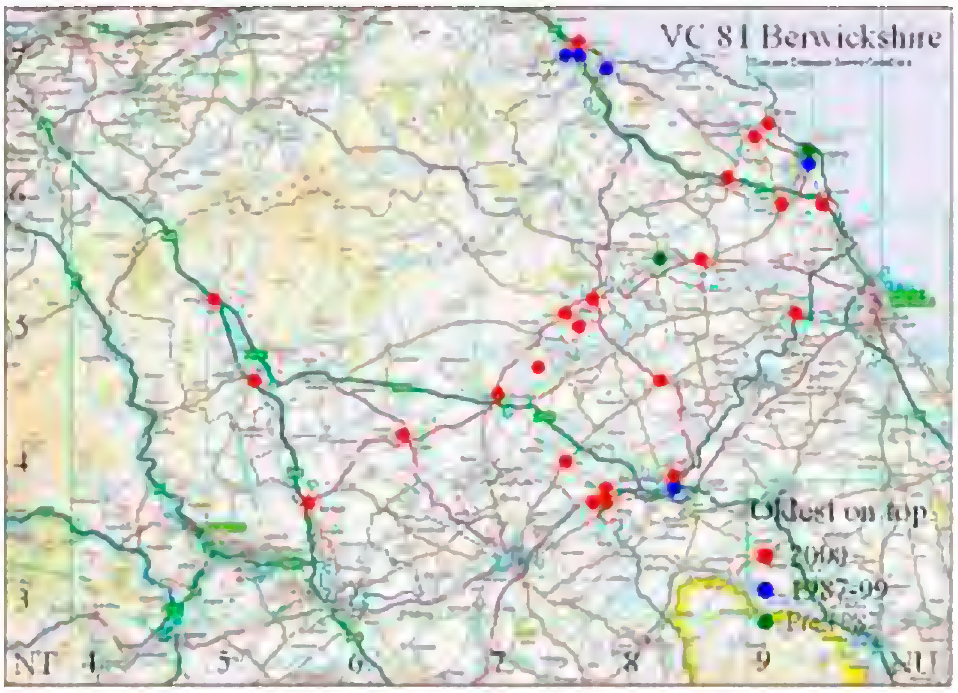
Bromus secalinus is a cornfield weed that was formerly widespread in England and local in Scotland but has been decreasing.

The only recent Berwickshire record was in 2007 as a cornfield weed near Ladykirk 94. There are historical records but they were not localised.

Buddleja davidii Butterfly-bush

Ruderal, neophyte, intrusive neophyte

Berwickshire 1987-2013	2% monads	7% tetrads	61% hectads
Britain 1987-1999		29% tetrads	49% hectads


VC 81 Berwickshire
Oldest on top
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1987-99
Pre 1987
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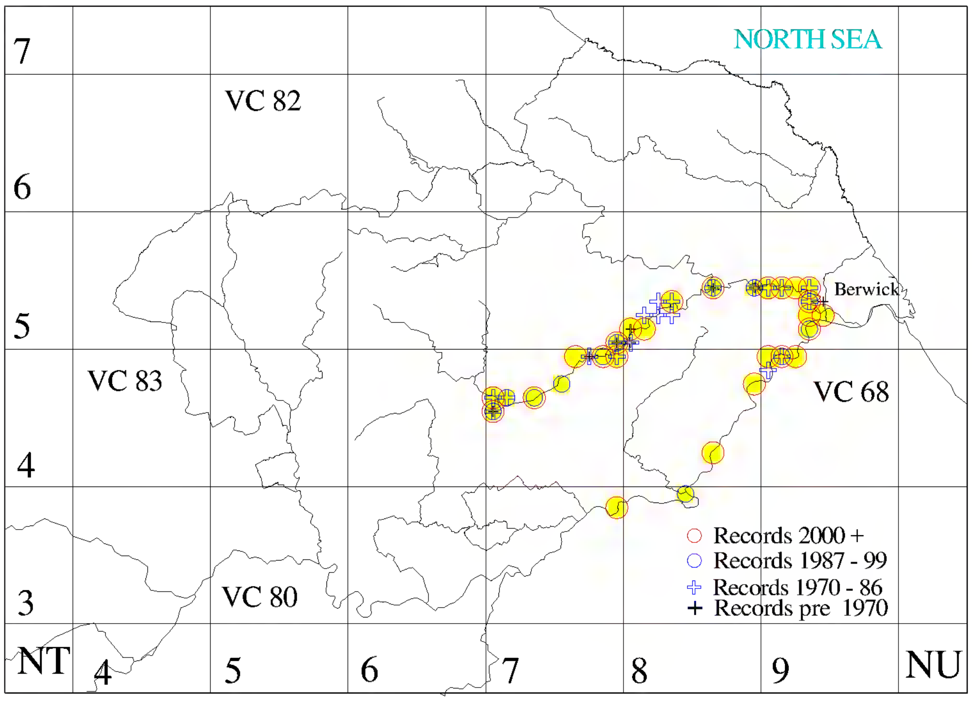
Buddleja davidii has been much slower to colonise Berwickshire than more urban counties in Britain. It was first recorded in 1958 but is only since the 1990's that it has slowly become conspicuous in town and villages where it grows on and at the foot of walls, on rubble in building sites and in waste places. It is also to be seen in a few places along the railway. Despite its invasive tendencies, it is still frequently grown in gardens, often in the expectation that its flowers will attract butterflies.

It is most frequent in Coldstream 84, Duns 75 and Eyemouth 96 where it has the potential to be destructive to walls. The most natural habitat to be colonised is Dunglass Dean 77, where it has worked its way along the burn from the railway.

Butomus umbellatus Flowering-rush

Aquatic, neophyte, prominent neophyte

Berwickshire 1987-2013	2% monads	6% tetrads	35% hectads
Britain 1987-1999		3% tetrads	19% hectads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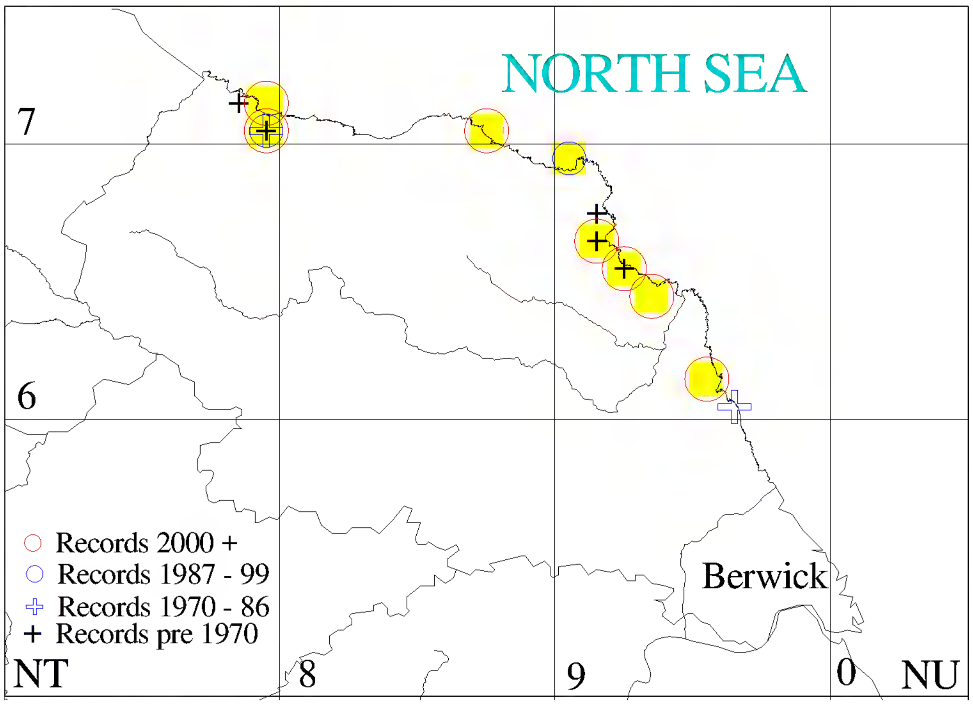
○ Records 2000 +
○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

An attractive incomer that grows on the river bed, rather than on the bank, is *Butomus umbellatus*. This species is most characteristic of the Blackadder Water and lower Whiteadder where it has become plentiful, though it is also found by the lower Tweed. This is a widespread native species in south and central England but is almost certain to have been introduced to Berwickshire as an ornamental and was first recorded in 1958.

Cakile maritima Sea Rocket

Coast, native, rare or scarce

Berwickshire 1987-2013	6¼ sites	2% tetrads	13% hectads
Britain 1987-1999		3% tetrads	15% hectads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Cakile maritima grows on sandy beaches all round the British coast.

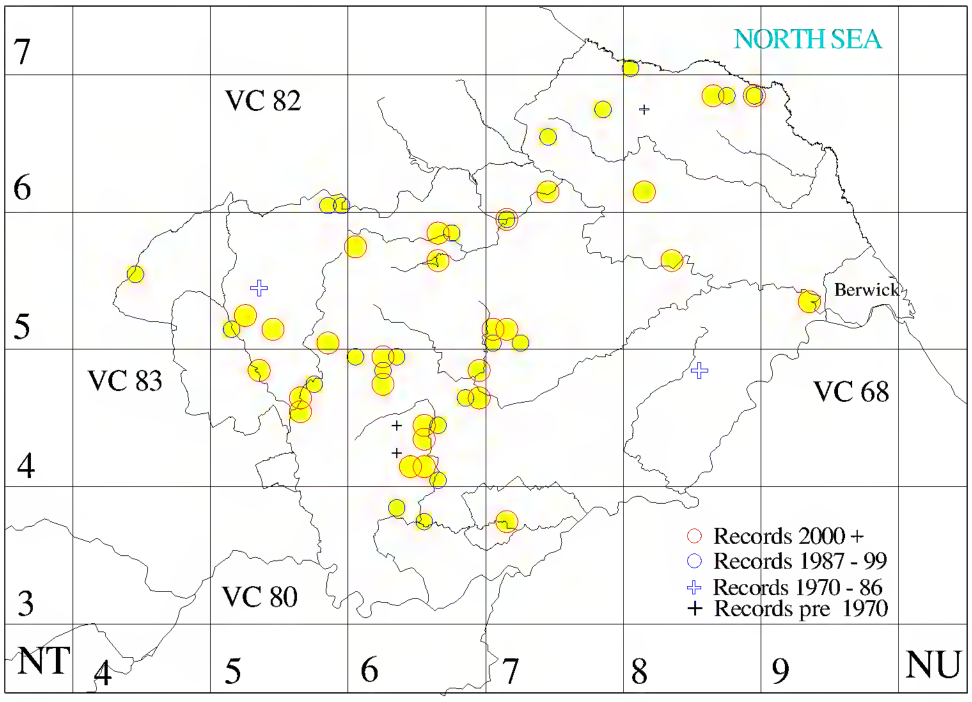
The Berwickshire population has fluctuated dramatically in recent years. It was found only twice in small quantity in the survey made between 1987 and 1999 but this increased to six sites between 2000 and 2013. It is currently quite plentiful at Pease Bay 77 and Coldingham Bay 96.

Natural factors related to storm damage and seasonal weather patterns are thought to lie behind the fluctuations, rather than visitor pressure, as was once thought likely.

Callitriche hamulata (C. brutia subsp. hamulata) Intermediate Water-starwort

Aquatic, native, other axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	61% hectads
Britain 1987-1999		12% tetrads	39% hectads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Records 2000 +
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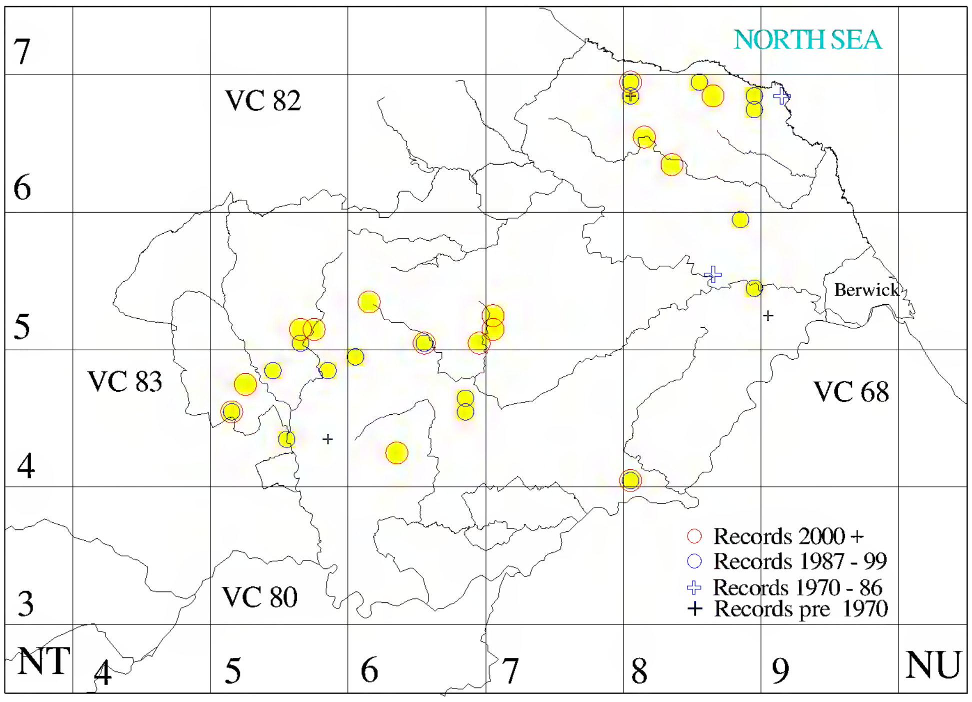
Callitriche hamulata is well scattered across Britain but is most frequent in the west and north. It prefers acid, oligotrophic water so it is unsurprising that this species is largely absent from the lowlands of Berwickshire. Given the degree of eutrophication even in relatively upland burns it is perhaps more remarkable that it remains so widespread. It is more often found in burns than ponds and is only weakly associated with sites supporting a diverse flora.

The recording history is very incomplete, so nothing can be deduced about long-term trends or recent colonisation.

Callitriche hermaphroditica Autumnal Water-starwort

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	35% hectads
Britain 1987-1999		2% tetrads	7% hectads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Berwick
Records 2000 +
Records 1987 - 99
Records 1970 - 86
Records pre 1970
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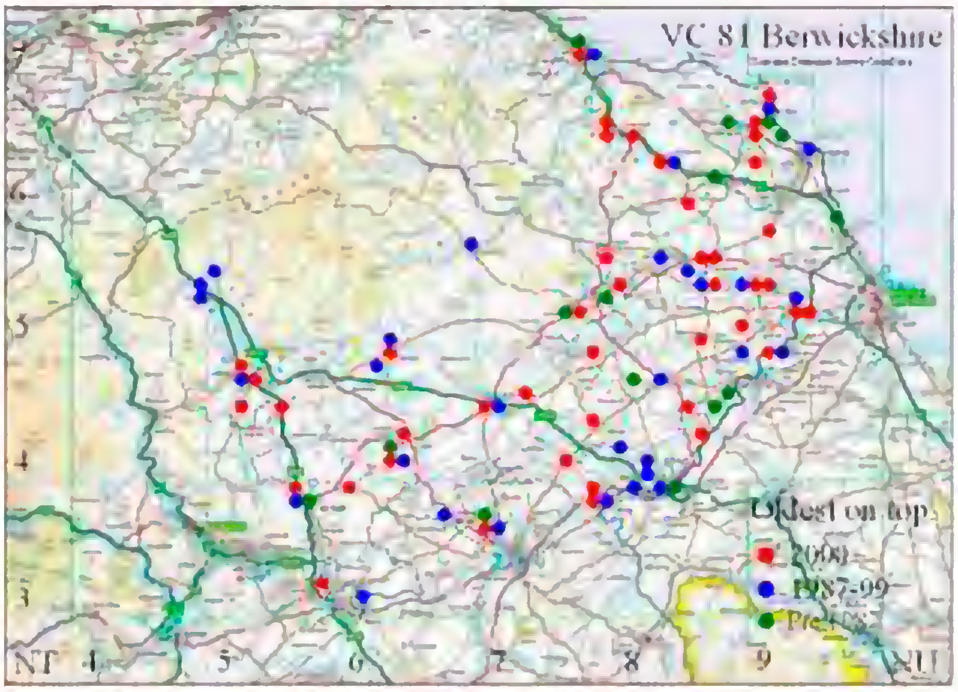
Callitriche hermaphroditica is rather scarce in Britain and most frequent in south and central Scotland. It prefers mesotropic, slow-moving water. In Berwickshire it is found in the less-acidic upper reaches of some of the burns and in some ponds. The best colonies are in burns with a relatively rich aquatic flora, in particular the upper reaches of the Lauder Burn 54 and the Blackadder Water and in the Wheel Burn 55 and Fangrist Burn 75. There have been no recent records from the lowlands.

The recording history is rather incomplete, so little can be deduced about long-term trends or recent colonisation.

Calystegia sepium Hedge Bindweed

Ruderal, neophyte

Berwickshire 1987-2013	7% monads	19% tetrads	83% hectads
Britain 1987-1999		58% tetrads	71% hectads



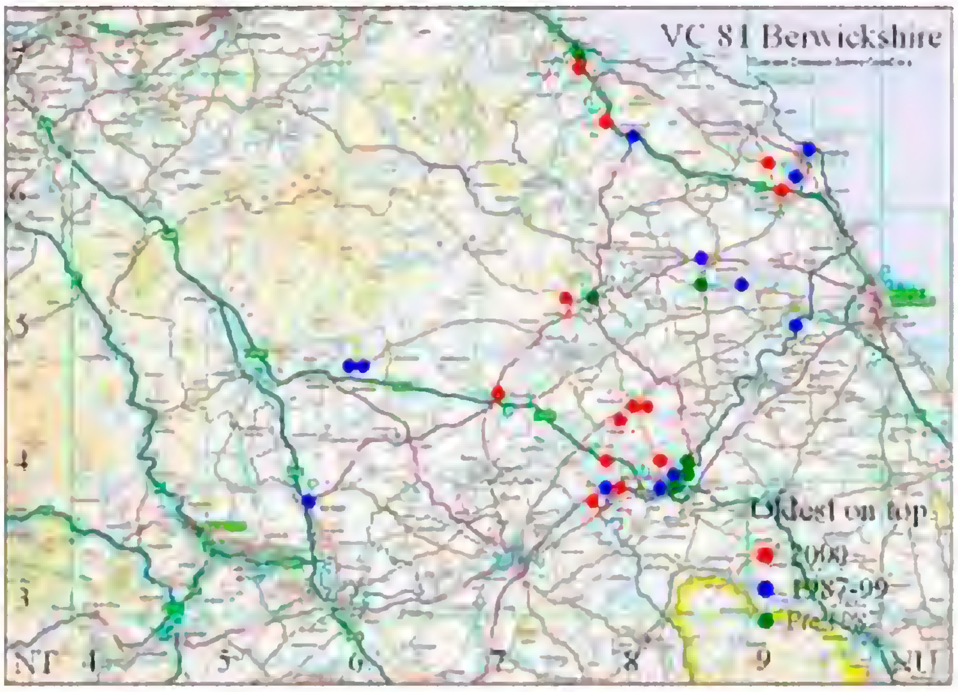
Calystegia sepium is ubiquitous in England, where it is native, but is less widespread in Scotland. Nevertheless it is a familiar plant in much of Scotland, including Berwickshire, sprawling over hedges with its conspicuous white trumpet-shaped flowers in late summer. It has not always been so. In his *Flora of Berwick-upon-Tweed* (1829) George Johnston lists one station only: 'in hedges west of Ladykirk House, but said to have been planted there as an ornamental flower'. Ladykirk House 84 was built in 1797; soon after the hedges at nearby Paxton House 95 were laid out in 1790. The records of the hedge mixtures planted at Paxton suggest a culture of innovation that might well have led to the deliberate introduction of *Calystegia* as an ornamental. If it was indeed being sold as a hedging plant at the time of the agricultural revolution, when there was a massive programme of hedge planting while the modern field system was being laid out throughout the cultivated land of Scotland, it could have become widespread in a short period of time. Such a history would explain why it remains predominantly a hedge plant in Scotland, though it has spread to ruderal habitats in towns and cities. In Berwickshire it occurs mainly in hedges and villages. It is also in a reed bed, its most typical native habitat in England, by Mire Loch at St Abbs Head 96, but it was first recorded there only in 2006 and the loch was not dammed until 1902. Another more natural habitat is by the Eye Water near its mouth 96, but that is within the town of Eyemouth. I have seen it by the Whiteadder Water 95 climbing elegantly up the stems of *Heracleum mantegazzianum* Giant Hogweed.

Calystegia sepium **climbing**
Heracleum mantegazzianum
mouth of Whiteadder 2003

Calystegia silvatica Large Bindweed

Ruderal, neophyte

Berwickshire 1987-2013	2% monads	7% tetrads	57% hectads
Britain 1987-1999		37% tetrads	54% hectads

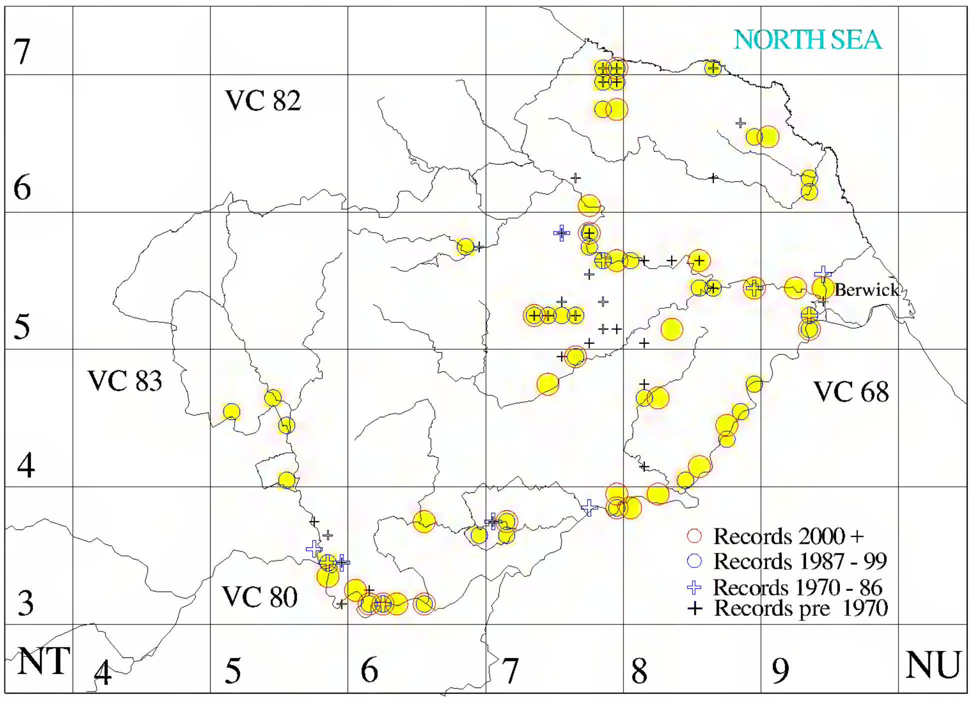


Calystegia silvatica is now almost as widespread in Britain as *C. sepium*, but less frequent. It is known to have been introduced in 1815. Max Walters (1993) in *Wild & Garden Plants* quotes Robinson (1870) who in *The Wild Garden* illustrates *Calystegia silvatica* and commends it in the caption as 'the type of nobler climbing plants, with annual stems, for hedgerows and shrubberies'. So it seems that it was by deliberate plantings that it has achieved such a wide distribution in Britain. Field experience in Berwickshire suggests that it is spreading only modestly from a few presumed points of introduction.

Campanula latifolia Giant Bellflower

Woodland, native, Berwickshire fine

Berwickshire 1987-2013	5% monads	14% tetrads	70% hectads
Britain 1987-1999		6% tetrads	25% hectads



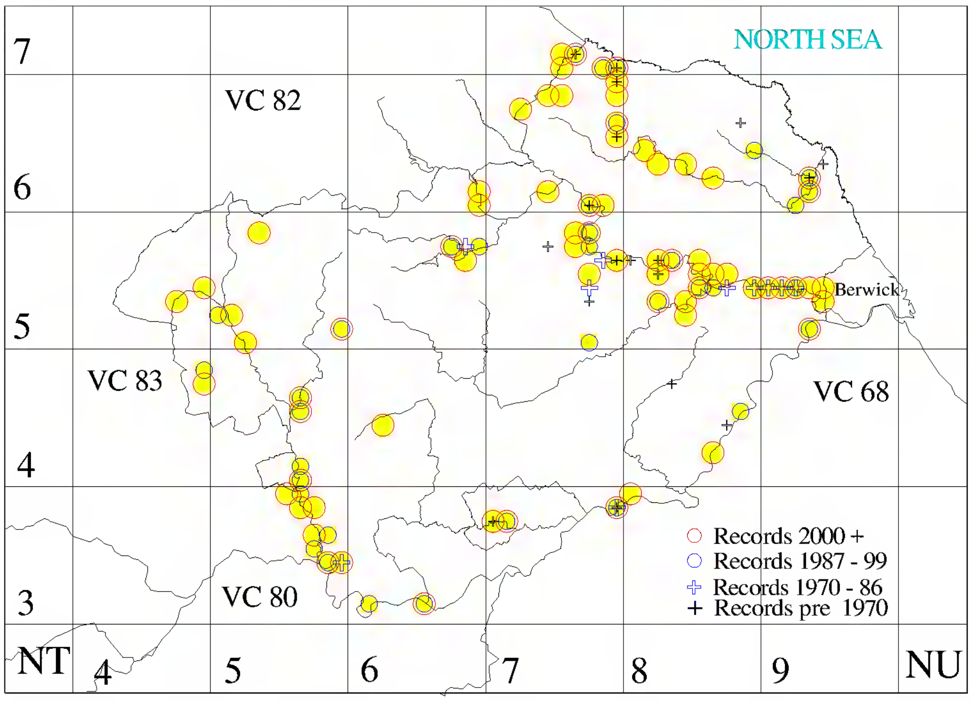
Campanula latifolia is a rather local plant of woodland that is most frequent in northern England and southern Scotland where it requires fertile soils. It is largely restricted to riverside woodland in Berwickshire, usually in the least disturbed sites, including gorges if these have some pockets of fertile soil away from the water. It is strongly associated with *Ulmus glabra* Wych Elm. By the River Tweed it is sometimes found in other habitats. At Mertoun 63 there is a fine colony on an island in the river, with more plants in open grassland on the river gravel than in the wooded parts. At Fireburnmill 83 and Tweedhill 95 it grows on old stone-built river retaining walls. It may have been introduced at Milne Graden 84.

This is a species that has been declining for many years and has been continuing to do so. Most of the remaining colonies are very small. Dutch elm disease did much damage in the 1980's by opening up the woodland canopy. Any recent colonisation along the rivers is more or less casual. However the recent resurgence of the elms might herald some revival in the fortunes of this species.

Cardamine amara Large Bitter-cress

Riverside, native, other axiophyte

Berwickshire 1987-2013	7% monads	18% tetrads	83% hectads
Britain 1987-1999		13% tetrads	30% hectads



Cardamine amara is a relatively widespread plant more frequent in the east of Britain than in the west. Although most typical of wet alderwoods, it is present all along the riversides of Berwickshire where there are scraps of ancient woodland and is occasionally found in shallow fen in more upland situations. It is absent from much of the Blackadder Water and the lower Tweed where there is no old woodland.

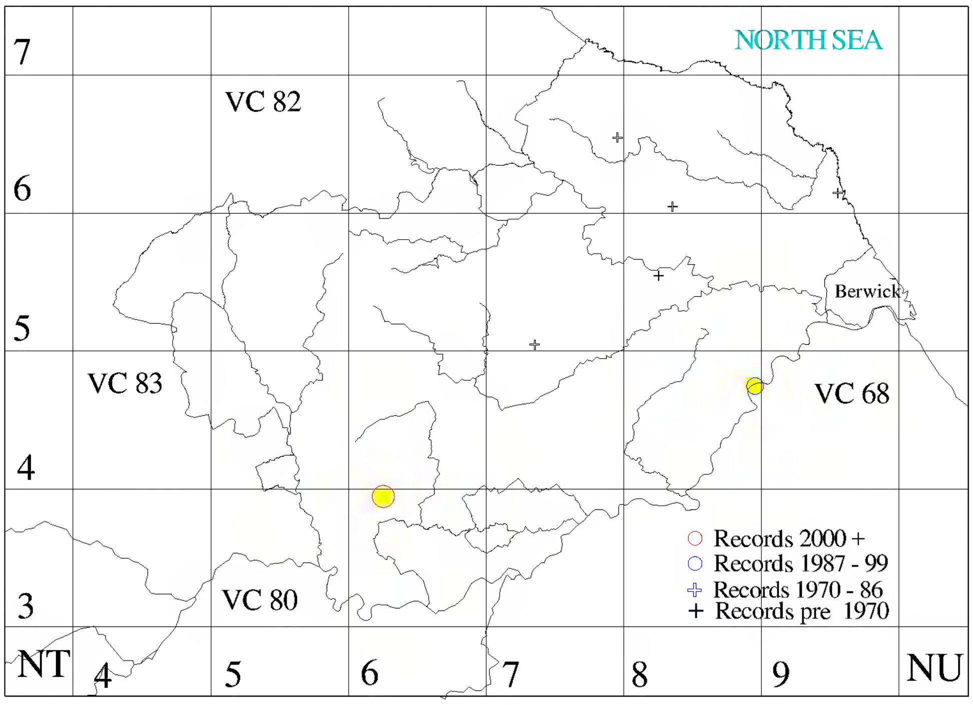
This appears to be a mobile species, colonising suitable habitat where the riverside is altered by floods. Nevertheless the paucity of records along the Tweed emphasises that its fairly exacting habitat requirements limit the opportunities for colonisation. The apparent increase in range in the upper sections of the river system is thought to be due to an enhanced ability to recognise this species when not in flower rather than to actual spread.

***Cardamine amara* near Cockburn Mill by the Whiteadder Water 1990**

Carduus nutans Musk Thistle

Grassland, native, rare or scarce

Berwickshire 1987-2013	1¼ sites	0.6% tetrads	9% hectads
Britain 1987-1999		15% tetrads	37% hectads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○ Records 2000 +
○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970

Carduus nutans is widespread in dry grassland in England but scarce in Scotland where it is often an introduction.

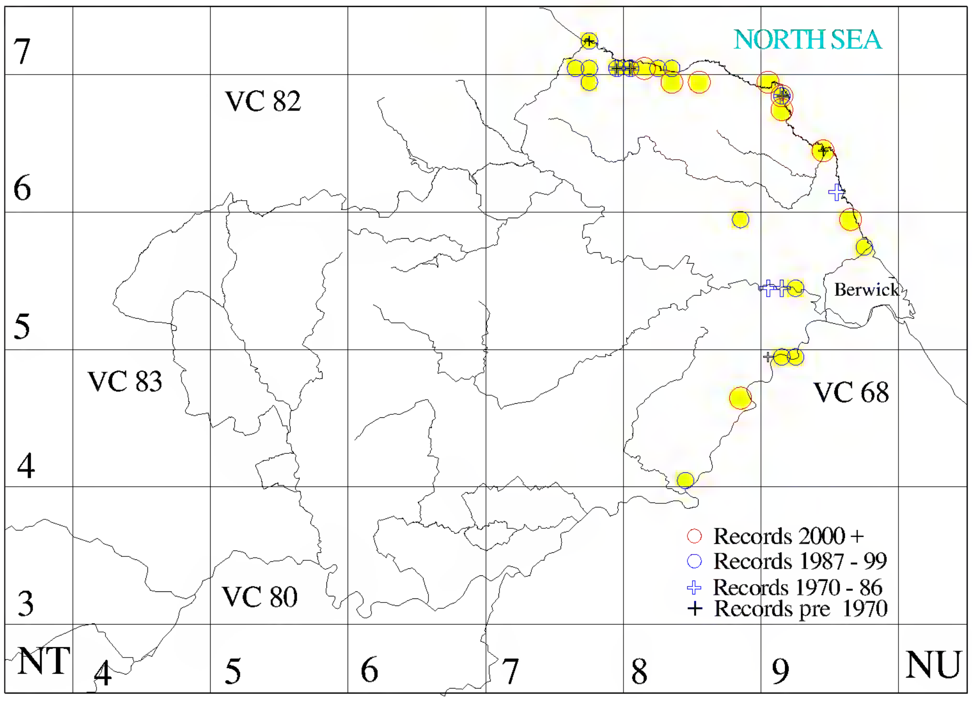
It seems to have been native in Berwickshire, but to have been much less frequent than in North Northumberland. It is almost extinct in the county. The losses have been due to ploughing and, possibly, to eutrophication.

It was found near Ladykirk 84 in 1997 as a possible native and in some quantity as a possible introduction in a game strip below Fans Hill 63 in 2009, where the plants were suspected of being hybrids with *C. crispus*.

Carduus tenuiflorus Slender Thistle

Grassland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	39% hectads
Britain 1987-1999		2% tetrads	13% hectads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○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970

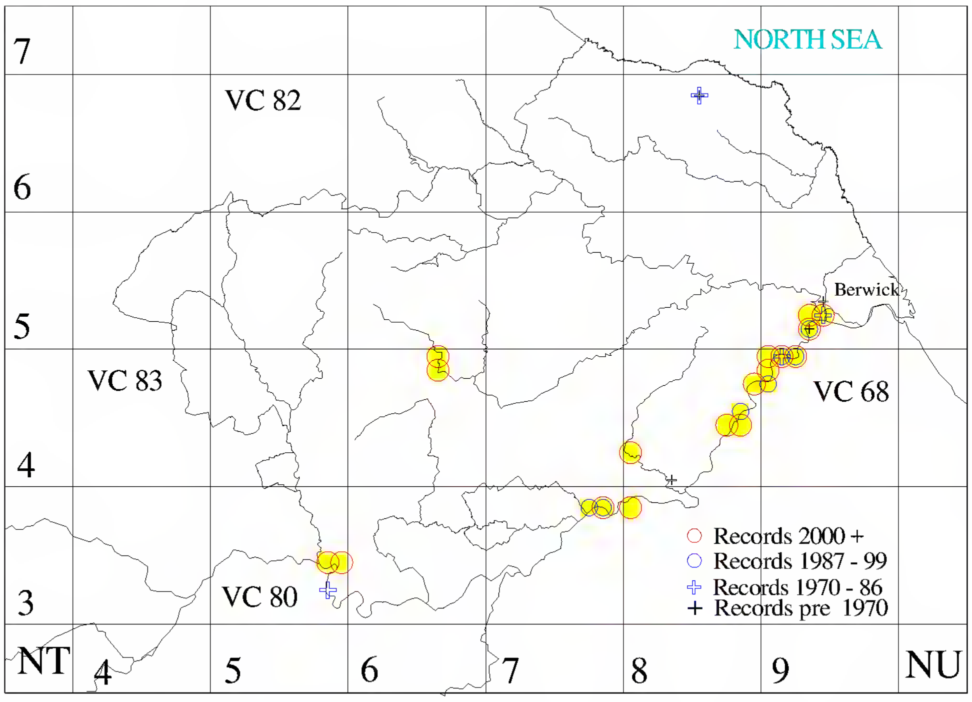
Carduus tenuiflorus is a predominantly coastal species in Britain becoming scarce north of the Firth of Forth. In Berwickshire it is found on dry banks by the coast well above the direct influence of salt spray but is only found inland on a few dry banks by the River Tweed and Whiteadder Water where it is often accompanied by the much more widespread *Carduus crispus* Welted Thistle. The best population is probably that on the inland side of Kirk Hill at St Abbs Head 96.

C. tenuiflorus appears to be in decline in the county. The reasons are not clear. Colonies appear to fluctuate in size and some occurrences seem to be more or less casual, though there is no evidence of substantial new colonies being formed.

Carex acuta Slender Tufted-sedge

Riverside, native, selected axiophyte

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		2% tetrads	13% hectads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○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

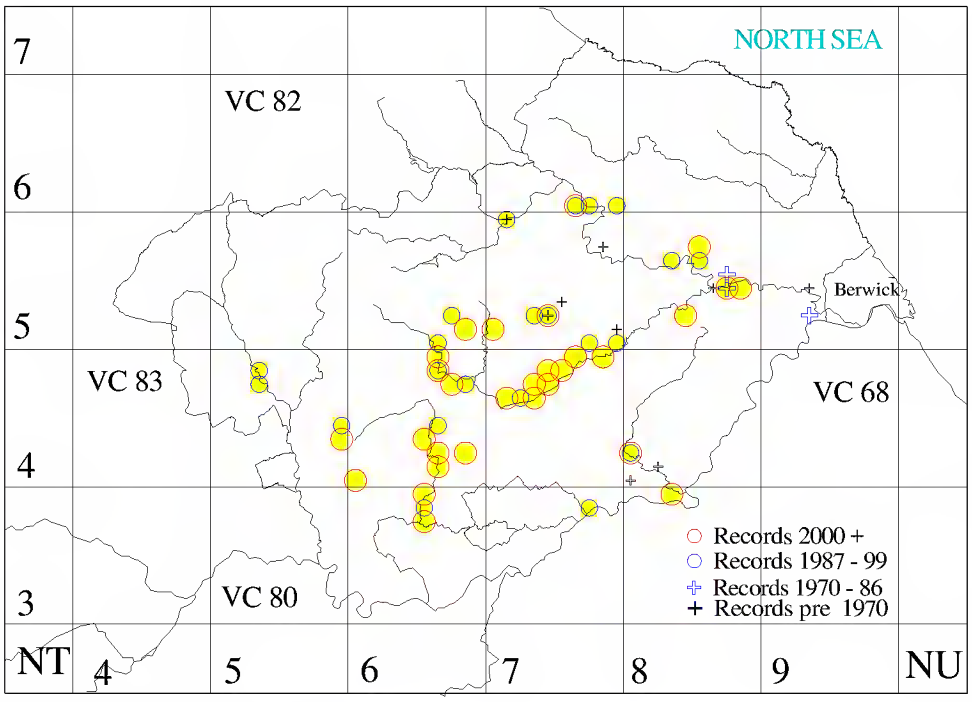
Carex acuta is a rather local sedge found across much of England but only in the south of Scotland. The Berwickshire population is probably the largest in Scotland. The species is quite frequent by the Lower Tweed favouring base-rich rocky outcrops at the water's edge, though sometimes found in more muddy places. In such places it is usually the only sedge present. Away from the Tweed it grows in *Carex riparia* Greater Pond-sedge swamp near the Leet Water and, more surprisingly, at 178m in *Carex acutiformis* Lesser Pond-sedge swamp by the upper Blackadder 64.

The extent of the Berwickshire population has only been established recently and there is no clear evidence of spread, nevertheless this is probably a mobile species that might have been becoming more plentiful in its limited habitat.

Carex acutiformis Lesser Pond-sedge

Wetland, native, other axiophyte

Berwickshire 1987-2013	4% monads	11% tetrads	48% hectads
Britain 1987-1999		12% tetrads	43% hectads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○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

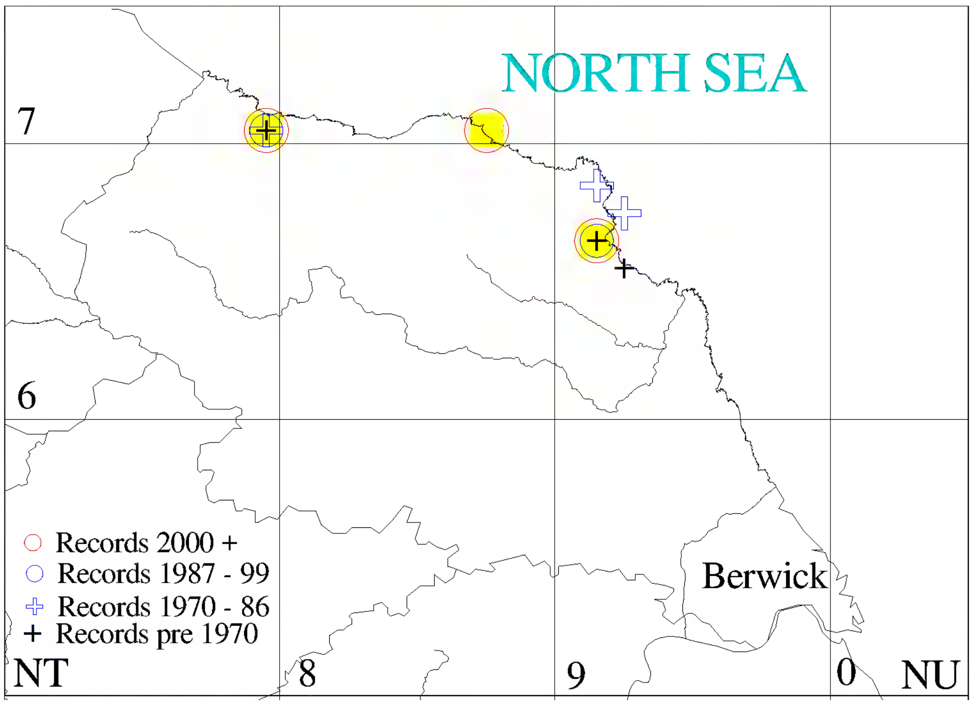
Carex acutiformis is a lowland sedge of fens that is scarce in the predominantly acidic soils of north and west Britain. In Berwickshire it forms such extensive stands in some river haughs that it may seem a common plant. The map is a reminder that such communities are in fact quite localised, with only a modest number of really typical colonies such as those by the upper Blackadder Water. Elsewhere, especially by the Eden Water and the lower Blackadder, most colonies are much reduced by drainage. By the Leet Water 84 it is largely replaced by *Carex riparia* Greater Pond-sedge, but the two species do grow together. No suitable habitat remains by the River Tweed.

No recent losses are evident at 1km scale as this very persistent plant will often survive in small quantity long after the bulk of its habitat has been lost. The historical record is not adequate to chronicle the losses suspected to have occurred in the more distant past.

Carex arenaria Sand Sedge

Coast, native, rare or scarce

Berwickshire 1987-2013	3 sites	0.9% tetrads	13% hectads
Britain 1987-1999		5% tetrads	21% hectads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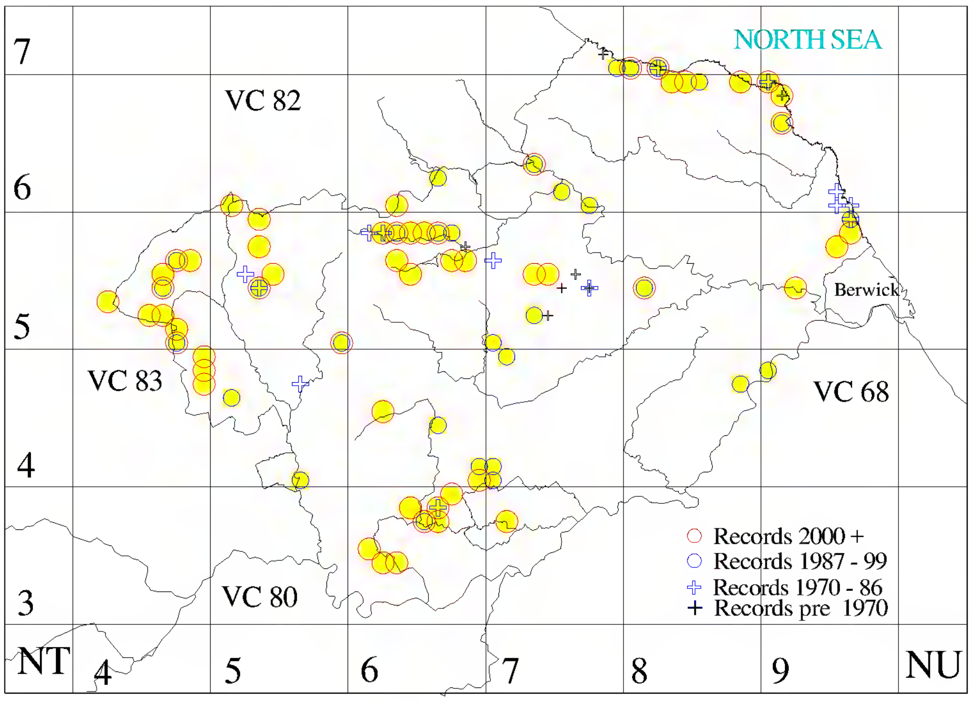
Carex arenaria is very widespread in sandy coastal grassland and dunes all round the British coast.

There is a shortage of suitable habitat on the rocky coastline of Berwickshire. The only two permanent colonies are at Pease Bay 77 amongst *Ammophila arenaria* Marram and Coldingham Bay 96 in sand dunes and among rocks above the beach, though plants have been temporarily established at the shoreline in a few other places.

Carex caryophyllea Spring Sedge

Grassland, native, other axiophyte

Berwickshire 1987-2013	6% monads	17% tetrads	91% hectads
Britain 1987-1999		24% tetrads	50% hectads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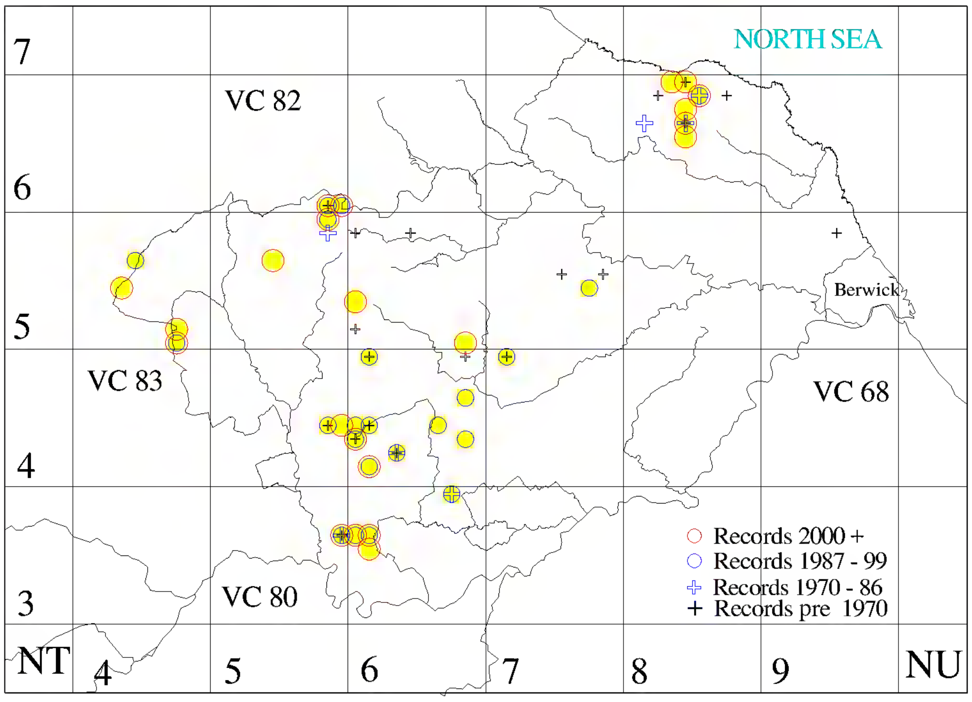
Carex caryophyllea is widespread but somewhat local in Britain. It is typically a plant of closely-grazed grassland on a variety of soils from calcareous to mildly acidic where it may form large clonal patches. Its habitats are often rocky, but other shallow soils may be colonised, even slightly flushed ones. In Berwickshire it is relatively sparsely distributed on the sea braes. Instead it has its headquarters on the igneous rocks of the Kelso Traps, the rocky grasslands near the Dye Water and by some of the hill burns in the Lammermuirs. It is frequently an associate of *Helianthemum nummularium* Common Rockrose, but by no means always so.

There is little evidence of decline and none of recent colonisation.

Carex curta (C. canescens) White Sedge

Moorland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	7% tetrads	48% hectads
Britain 1987-1999		16% tetrads	30% hectads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Carex curta is very widespread in the hill country of Wales, northern England and Scotland. It is a sedge of acidic bogs including the margins of raised bogs. It is sometimes found in less acidic fens where a carpet of *Sphagnum* marks the potential development of a raised bog community.

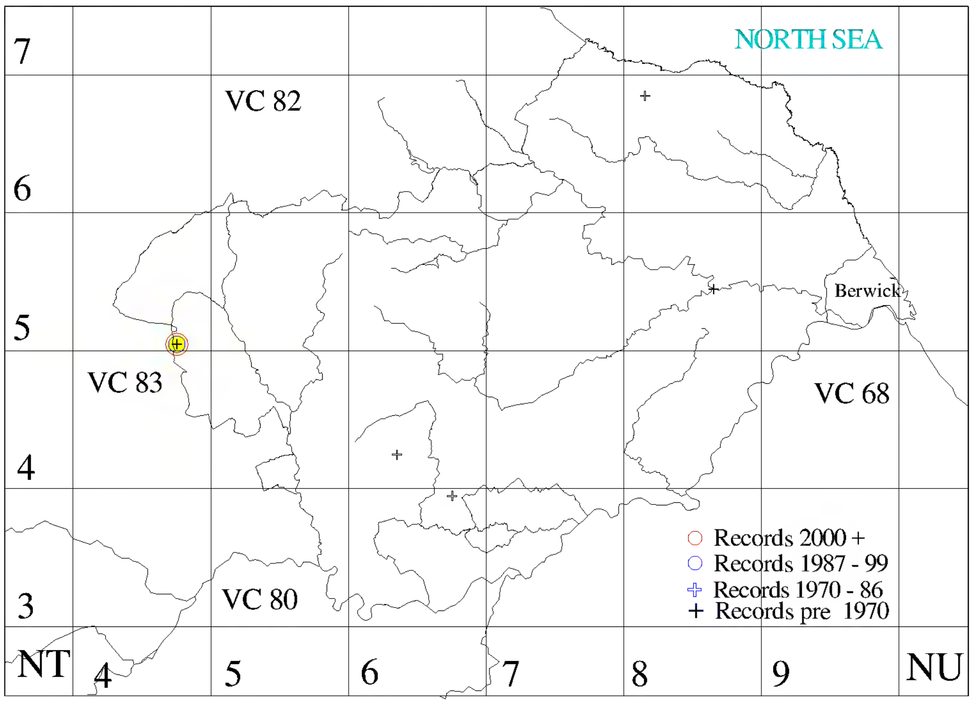
It is rather scarce in Berwickshire as most of the acidic moorland of the Lammermuirs is too dry for it. Its principal sites are Longmuir Moss 45, Redpath Moss 63, Dogden Moss 64, Drone Moss 86, Dowlaw Moss 86 and Long Moss on Coldingham Common 86.

Small colonies can be elusive on the open moorland and this explains the poor match between such records in the two recent surveys. There is no evidence of recent decline or of new colonisation.

Carex diandra Lesser Tussock-sedge

Wetland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.9% tetrads	6% hectads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✣ Records 1970 - 86
+ Records pre 1970

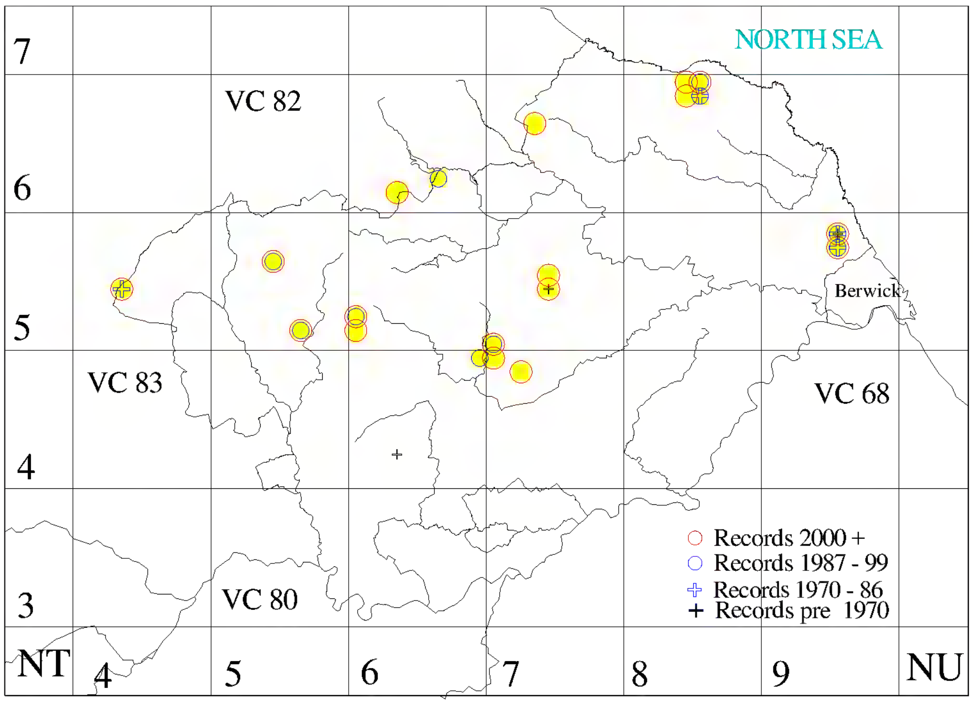
Carex diandra grows in base-rich watery mires and is very local in Britain.

The one extant Berwickshire colony is a good one over an area of two hectares in a botanically rich fen at Longmuir Moss 54. The former colonies were lost to drainage.

Carex dioica Dioecious Sedge

Wetland, native, rare or scarce

Berwickshire 1987-2013	14¼ sites	4% tetrads	43% hectads
Britain 1987-1999		17% tetrads	26% hectads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Carex dioica grows in flushes with some base-enrichment. It is very widespread in western Scotland, north-west England and Wales but scarcer in the east.

Berwickshire has limited suitable habitat and its colonies are in small features all vulnerable to small-scale disturbance.

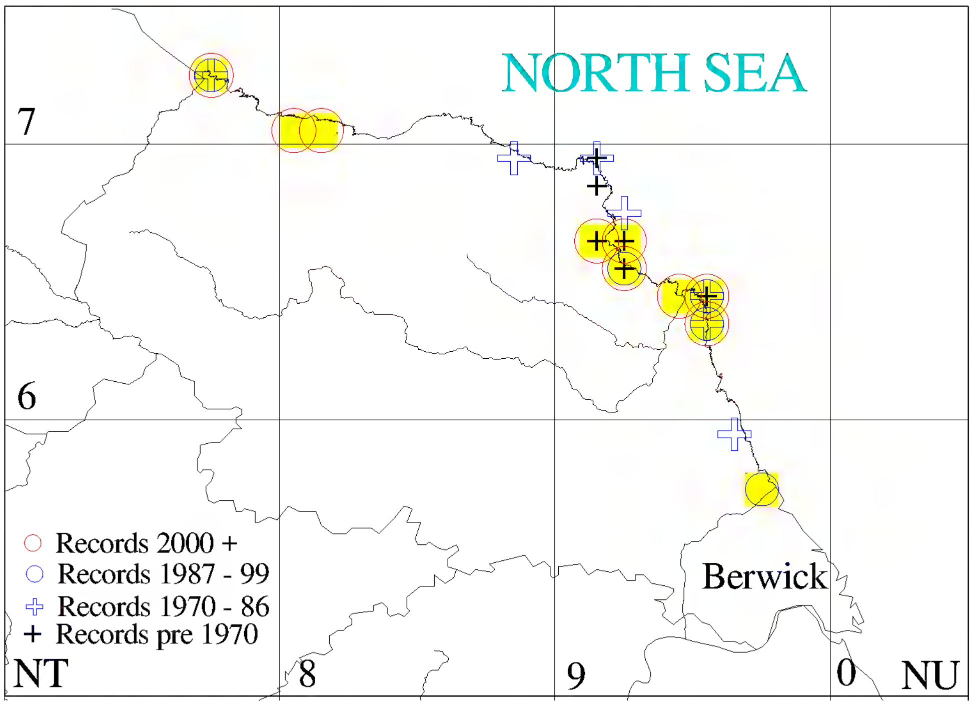
C. dioica is strongly associated with *Eleocharis quinqueflora* Few-flowered Spike-rush in Berwickshire.

The best series of flushes with *C. dioica* are at Wheel Burn 55, Hells Cleugh 75, Dowlaw Moss 86 and Lamberton Moor 95.

Carex distans Distant Sedge

Coast, native, rare or scarce

Berwickshire 1987-2013	8 sites	2% tetrads	17% hectads
Britain 1987-1999		3% tetrads	18% hectads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Carex distans grows in coastal habitats including cliffs, rocky shores and saltmarsh all round the British coast, also in inland marshes in southern England.

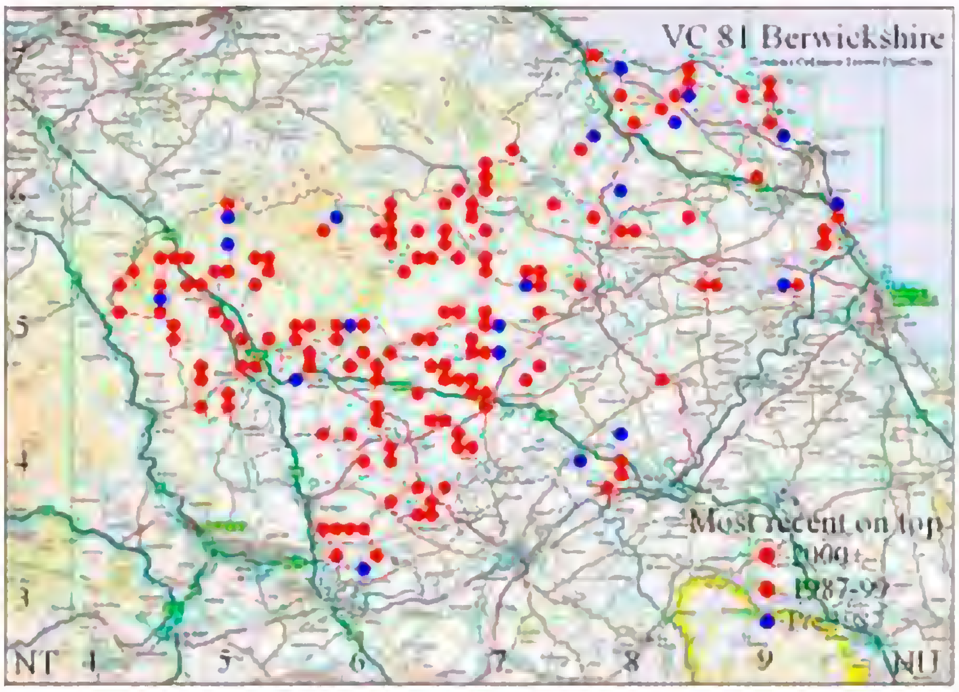
It is occasional on the Berwickshire coast, sometimes in inaccessible locations, so it is probably somewhat under-recorded.

There are good colonies at Yellow Craig 96 amongst rocks and in saltmarsh and at Gunsgreen 96.

Carex disticha Brown Sedge

Wetland, native, other axiophyte

Berwickshire 1987-2013	13% monads	32% tetrads	91% hectads
Britain 1987-1999		9% tetrads	30% hectads


VC 81 Berwickshire
Most recent on top
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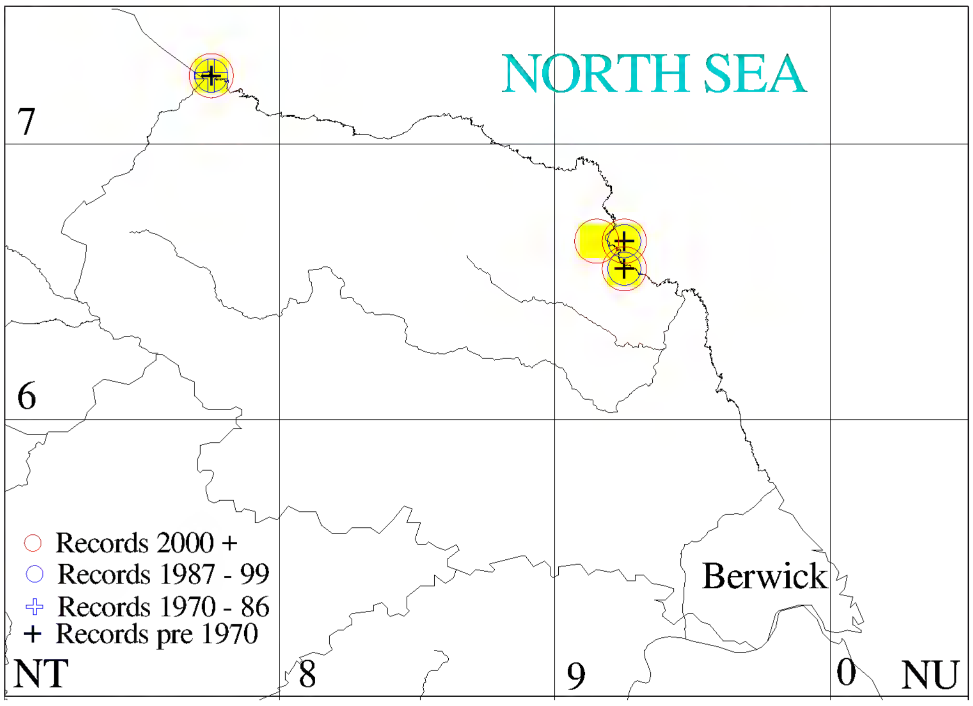
Carex disticha is a relatively local and southern sedge of shallow fens and marshes in Britain but is altogether more frequent in the Scottish Borders extending well up into the hills where it may be found in any extensive flush system that is even very slightly base-rich. It is indeed rather too common in Berwickshire to be an indicator of species-rich habitat. Unsurprisingly it is absent from the principal arable areas in the Merse except as a rare plant of riverside flushes and fens.

This is too widespread a species to show much recent change at 1km scale.

Carex extensa Long-bracted Sedge

Coast, native, rare or scarce

Berwickshire 1987-2013	3 sites	1% tetrads	9% hectads
Britain 1987-1999		2% tetrads	10% hectads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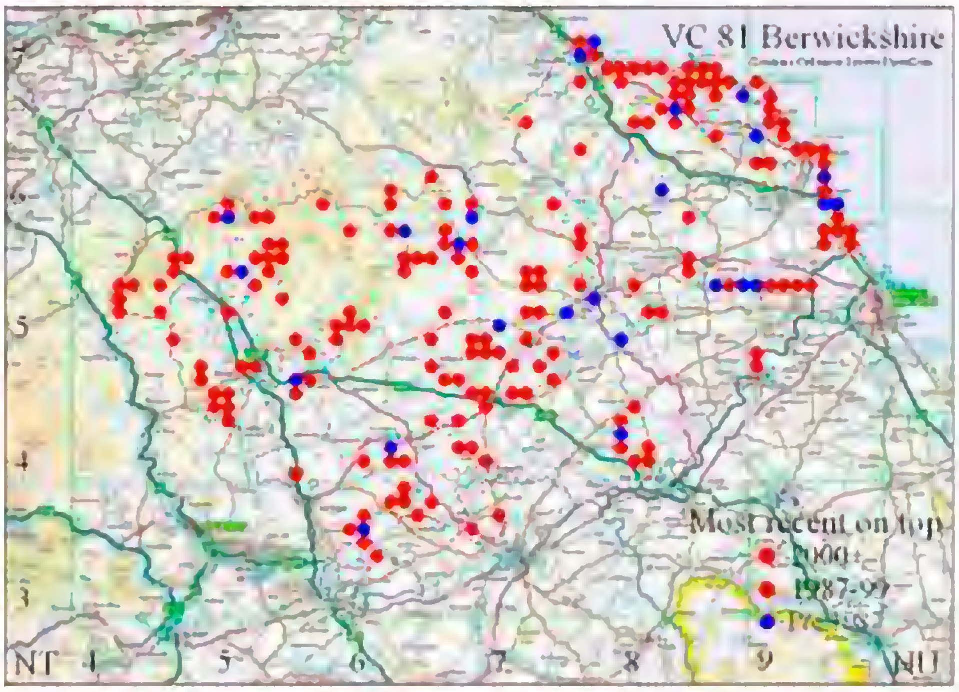
Carex extensa is widespread in coastal rock pools and saltmarsh on the west coast in Britain, but scarce on the east coast.

In Berwickshire there is a modest colony at Ramsheugh Bay 77 and good colonies at Yellow Craig 96 with an outlier in Coldingham Bay 96.

Carex flacca Glaucous Sedge

Wetland, native, other axiophyte

Berwickshire 1987-2013	15% monads	37% tetrads	91% hectads
Britain 1987-1999		66% tetrads	88% hectads



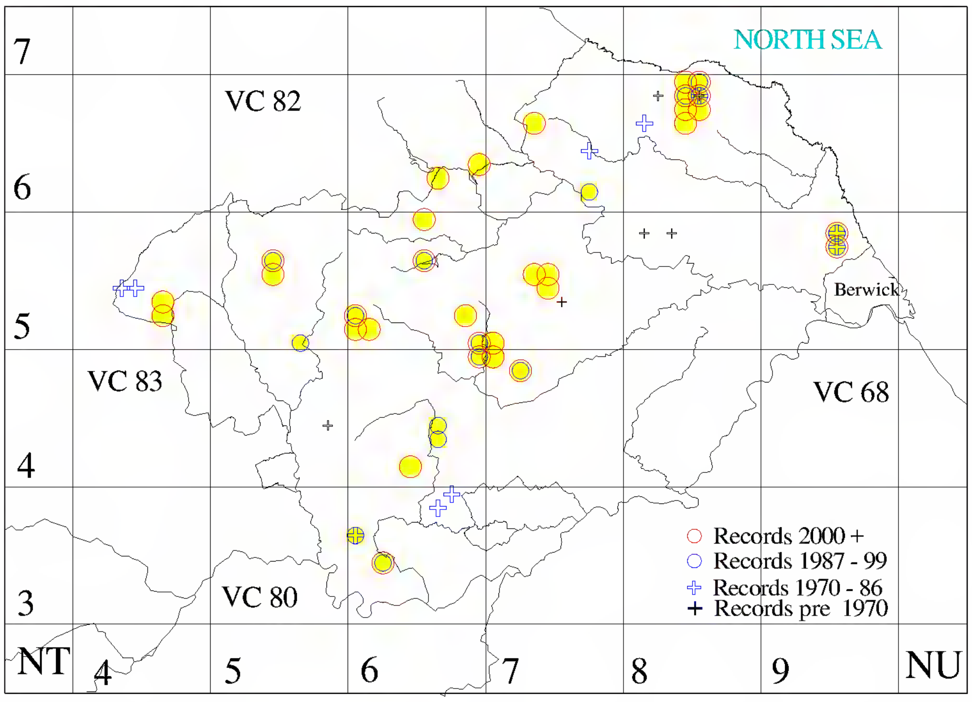
Carex flacca is the most widespread British sedge. While it cannot survive in acidic conditions and prefers calcareous soils it is tolerant of neutral soils and grows where the competition is not too great, taking advantage of unstable slopes and open mires. In Berwickshire it is a good indicator of species-rich habitat, both grassland and wetland. The steep slightly-flushed slopes it favours are a feature of the coastal grasslands, the lower Whiteadder and many of the hill burns. The alternative habitat in flushes on gentle slopes covers almost the full range of species-rich hill flushes.

While *C. flacca* is an effective coloniser of open habitat at fine spatial scales there is no evidence of spread at 1km scale. The considerable degree of mismatch between the inland records of the different surveys is thought to be mainly due to differences in sampling, though some apparent losses may be real.

Carex hostiana Tawny Sedge

Wetland, native, other axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	48% hectads
Britain 1987-1999		22% tetrads	41% hectads



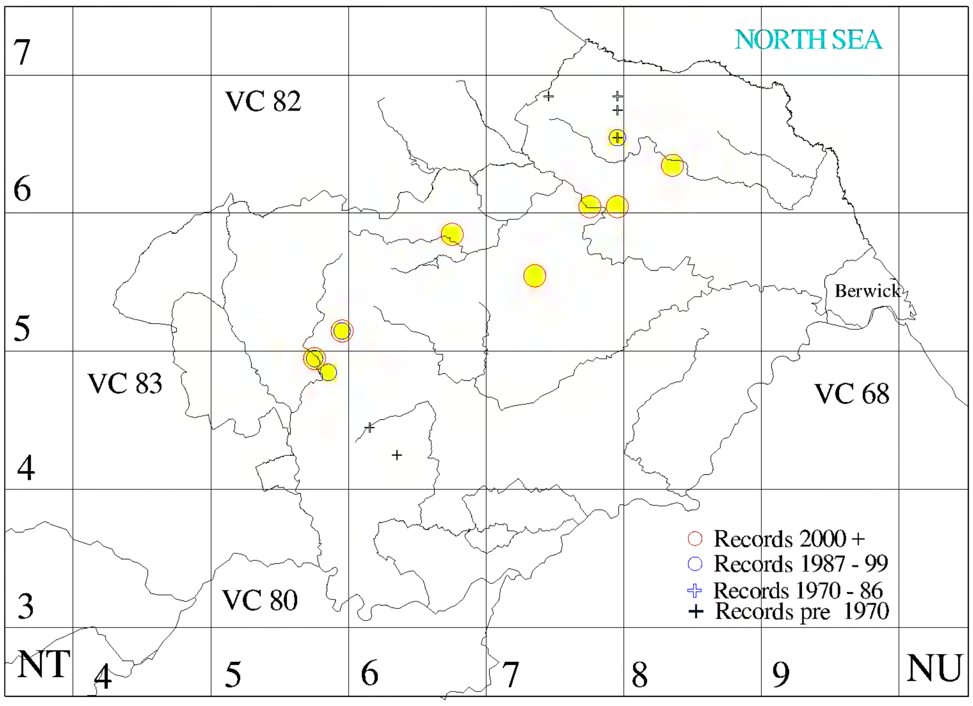
Carex hostiana has a northern and western distribution in Britain. In the west it is found in mires that are quite acidic but in the east it is limited to much more calcareous conditions. In the calcareous flushes of Berwickshire it is a component of an association characterised by *Carex dioica* Dioecious Sedge and *Eleocharis quinqueflora* Few-flowered Spike-rush but it is slightly less demanding than those two species. It is most plentiful in the flushes near coast that enjoy a more oceanic climate at the head of Lumsdaine Dean 86 and at Lamberton Moor Moss 95. Inland the best flushes for *C. hostiana* are near the Fangrist Burn 64, in and near Hells Cleugh below Langton Edge 75 and by the Whalplaw Burn in the Lammermuirs 55.

This is a species that has long since ceased to colonise in the county. The most significant recent loss was of a good population on Gordon Common 64 when it was drained and planted and then bought as a Community Woodland.

Carex laevigata Smooth-stalked Sedge

Woodland, native, rare or scarce

Berwickshire 1987-2013	8 sites	2% tetrads	26% hectads
Britain 1987-1999		7% tetrads	24% hectads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+ Records 1970 - 86
+ Records pre 1970

Carex laevigata is much more widespread in the west of Britain than the east. It grows in woodland edge and flush communities.

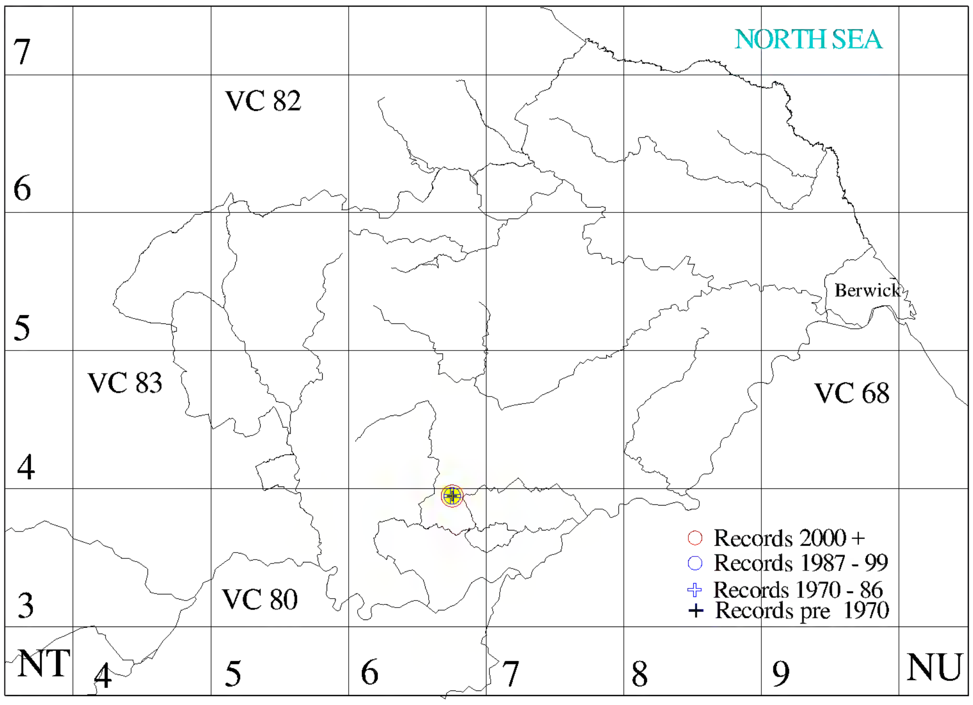
There are representative colonies in Berwickshire by the Blythe Water 54 and Brunta Burn 55 in the west and at Aikyside Wood 76 in the east. It also occurs wet places by the Dye Water between Rathburne and Wrunklaw 65 with just a few plants elsewhere.

There have been a few losses in the past, but the historical record is very incomplete.

Carex lasiocarpa Slender Sedge

Wetland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		2% tetrads	10% hectads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+ Records 1970 - 86
+ Records pre 1970

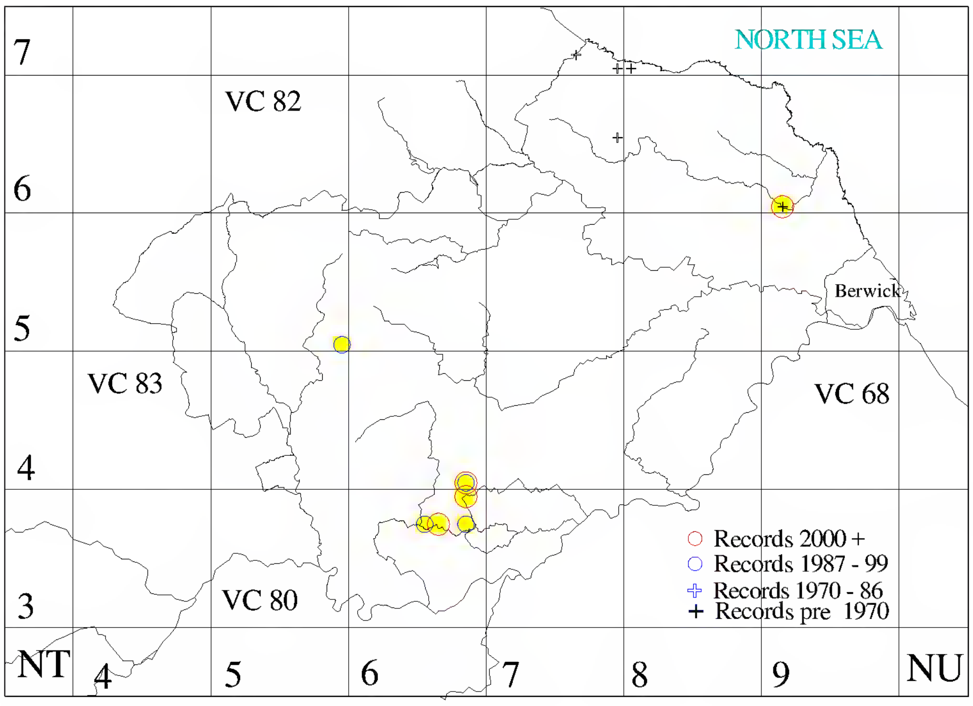
Carex lasiocarpa is quite frequent in the west of Scotland but scarce elsewhere in Britain. It grows at the water's edge in swamps at the edge of lochs.

The only Berwickshire colony is at Lurgie Loch 63. Following drainage of the adjacent land the water table has fallen, accelerating vegetation succession. The loch itself has gone and is largely replaced by carr woodland but this sedge has proved remarkably persistent and remains widespread in the more open areas where it may be associated with *Molinia* Purple Moor-grass, but it only flowers in the wettest places.

Carex muricata subsp. lamprocarpa (C. m. subsp. pairae) Prickly Sedge

Grassland, native, rare or scarce

Berwickshire 1987-2013	3¼ sites	2% tetrads	17% hectads
Britain 1987-1999		7% tetrads	21% hectads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Carex muricata subsp. lamprocarpa is rather local in Britain and most frequent in the south. It favours dry and sometimes sandy grassland.

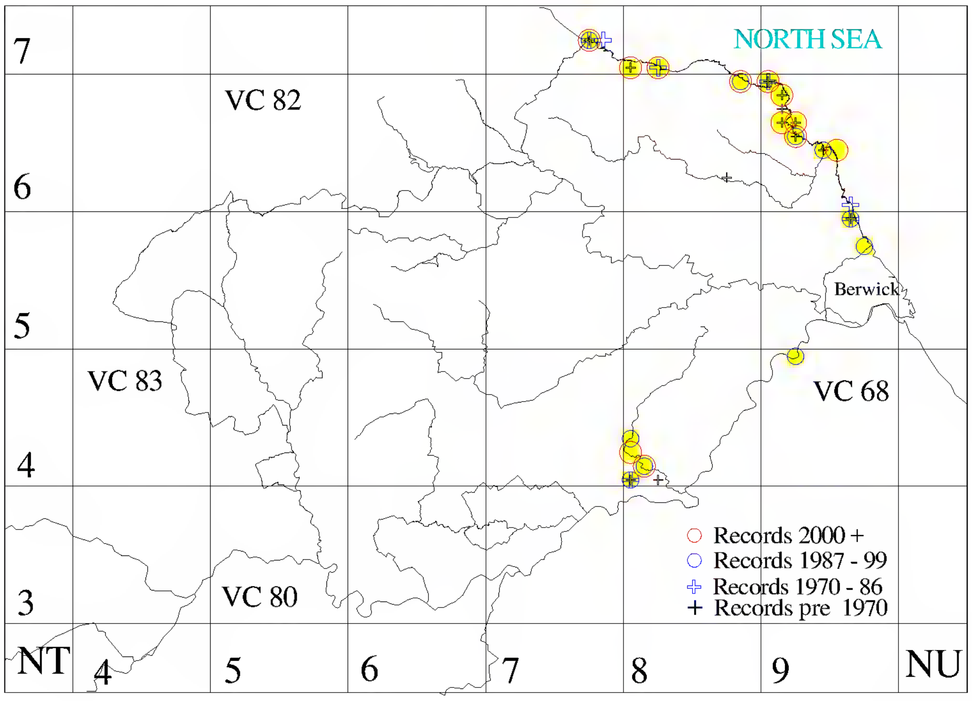
There are only two substantial colonies in Berwickshire, both on the basaltic lavas of the Kelso traps. These are at Hareheugh Craigs 64, and at Muckle Thairn 63 at both of which it is associated with *Dianthus deltoides* Maiden Pink. A few plants survive near the Jubilee Bridge on the Eye Water 96 but the *Dianthus* formerly associated with it there has been lost. The other two recent records are from roadsides where it is thought to have been a casual introduction with road-stone.

The Hareheugh Craigs colony was surveyed on 22 July 2000 and on 28 June 2007. In 2000 33 clumps were recorded within three 10x10m cells. In 2007 six 10x10m cells were occupied. Grazing had been reduced by 2007 under a stewardship scheme, allowing more plants to fruit and apparently resulting in an increase in the colony. However by 2007 many of the plants were becoming threatened by the spread of coarse grasses.

Carex otrubae False Fox-sedge

Coast, native, selected axiophyte

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		23% tetrads	50% hectads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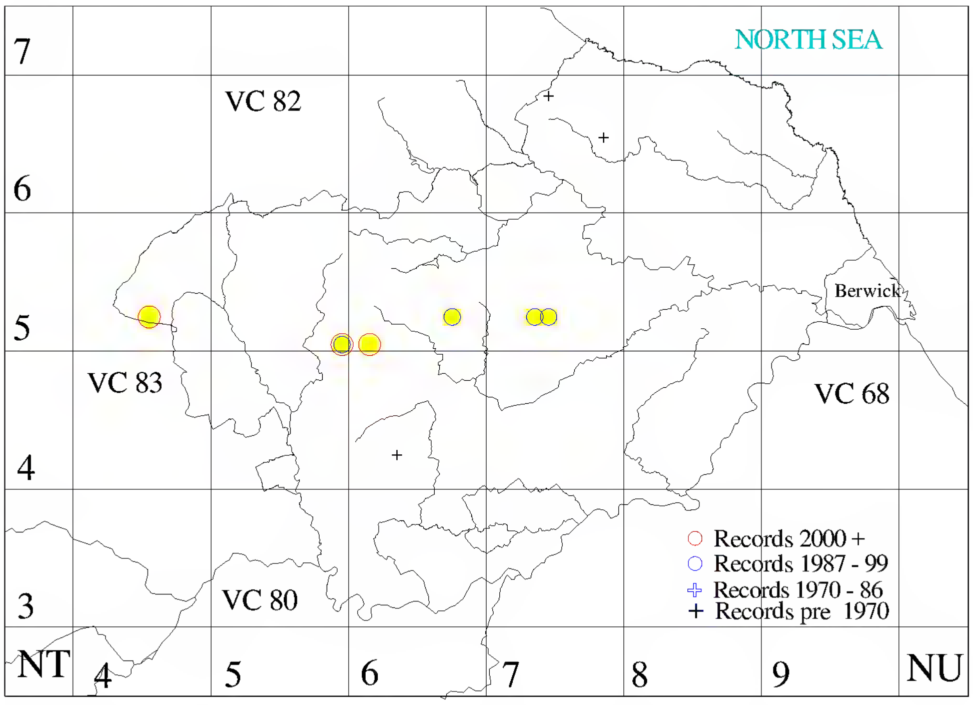
Carex otrubae grows in wet places on heavy soils and flushes near the sea. It is very widespread in southern England but largely coastal further north. The coastal colonies in Berwickshire are mostly at the back of beaches and amongst rocks by the sea. In contrast the inland colonies in fens and flushes near the Leet Water 84 are often associated with other sedges, *Carex riparia* Greater Pond-sedge in particular. One clump found in 1987 by the River Tweed 94 was probably a casual.

The coastal colonies are not under threat, welcome assurance of a low level of human disturbance, though some turnover in individual colonies is suspected as so many are at the mercy of storms. The inland fens have suffered drainage in the past and habitat succession is gradually eliminating this species.

Carex pallescens Pale Sedge

Woodland, native, rare or scarce

Berwickshire 1987-2013	3½ sites	2% tetrads	17% hectads
Britain 1987-1999		17% tetrads	38% hectads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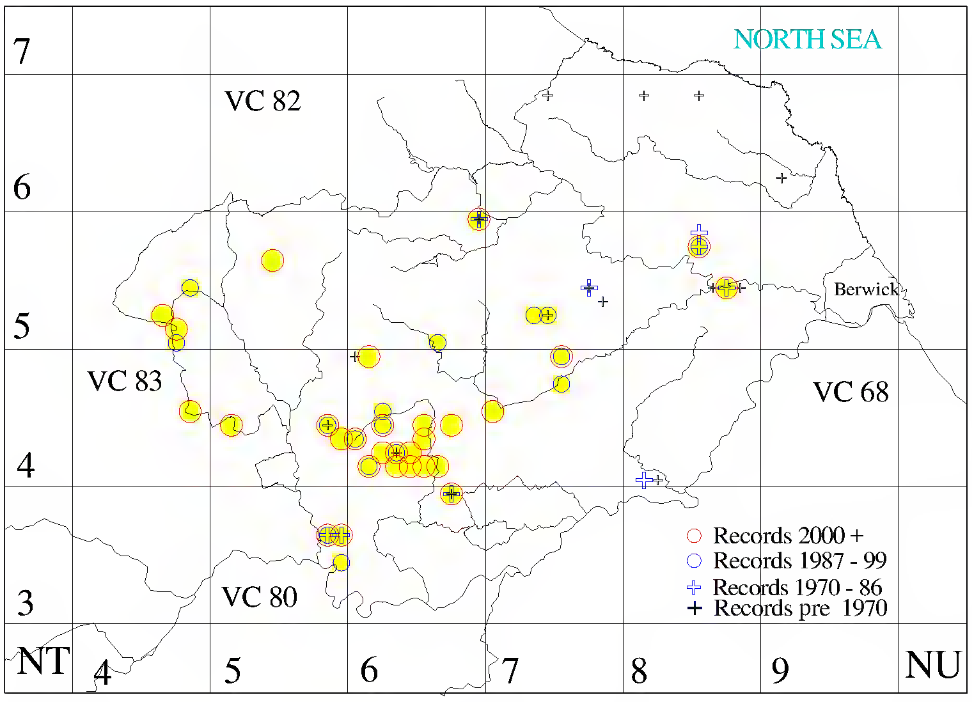
Carex pallescens is widespread in western Britain but more local in the east. It grows in damp and often shaded habitats along burns and woodland edge but in more open habitats in the west.

It is very poorly represented in Berwickshire with small colonies near Threeburnford 45, at Cromwells 55 and near Eastside 65. It has not been seen recently at Weetfoot Bog 65 or by the Wellcleugh Burn near Langtonlees Cleugh 75.

Carex paniculata Greater Tussock-sedge

Wetland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	48% hectads
Britain 1987-1999		11% tetrads	39% hectads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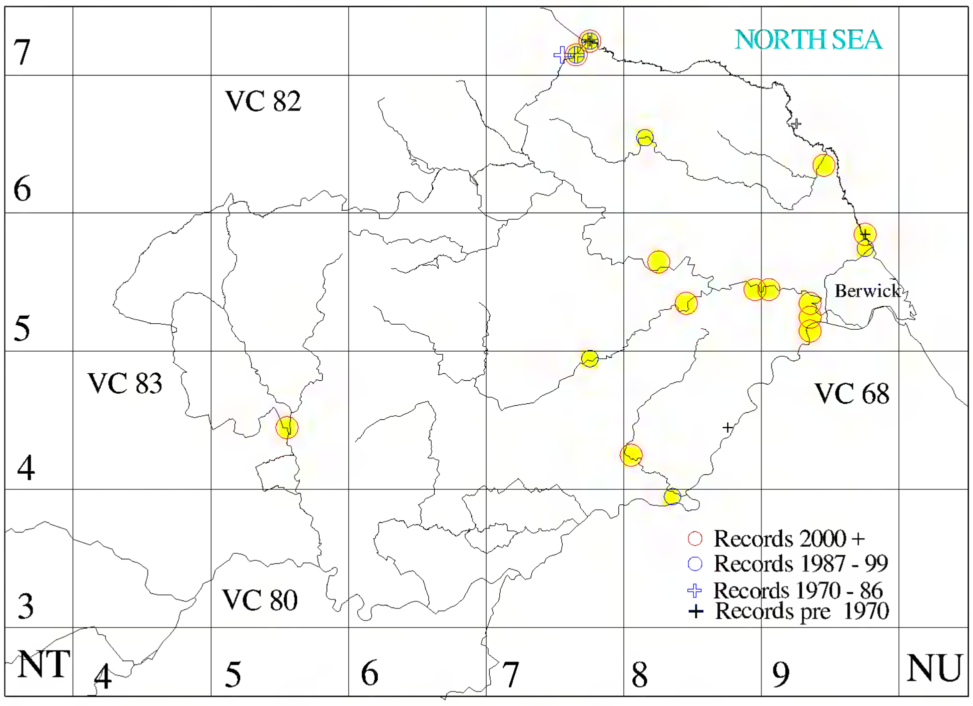
Carex paniculata is rather local but widespread in southern Britain, favouring areas of fen peat such as the Norfolk Broads and the Somerset Levels. In Berwickshire its distribution is strongly centred on the formerly extensive fens in the Gordon area. It is still plentiful in Gordon Moss 64, despite the spread of birch, where it depends on spring water coursing through its roots and is found along the now-canalised Hareford Burn that drains that formerly great wetland. Other good populations are at Everett Moss 64, Longmuir Moss 45 and Redpath Moss 53. There is a surprising colony in a small wetland area north of Chirnside 85 which is cut off by the former railway from the now-canalised Billie Burn which drained the fine wetland of Billie Mire.

This is a conspicuous species and there are a number of early records in the east of the county marking wetlands now drained. It has not been seen recently in any the remnants of the series of wetlands on the Hirsel estate 84.

Carex pendula Pendulous Sedge

Woodland, native, rare or scarce

Berwickshire 1987-2013	3+10 sites	4% tetrads	39% hectads
Britain 1987-1999		25% tetrads	45% hectads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Carex pendula is very widespread in wet woodland in southern Britain but becomes scarce further north. It has undergone a remarkable range expansion in recent decades.

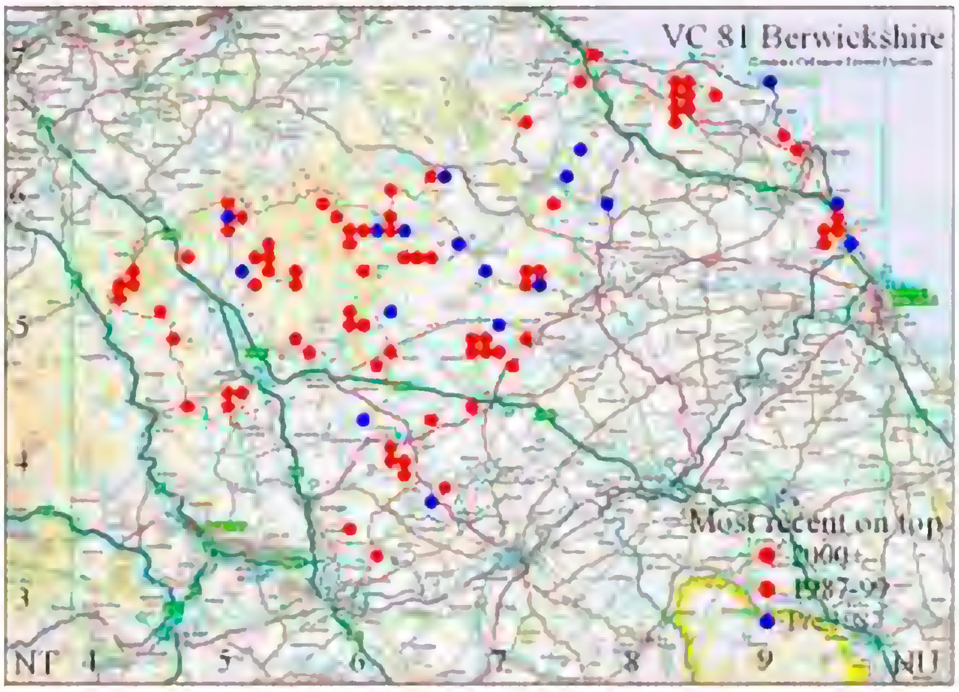
Until recently it was only known in Berwickshire at two coastal sites. It has long been plentiful in Dunglass Dean 77 and along the undercliff just north of the English border 95. However it has now become quite frequent along the lower Whiteadder Water 95 and in a few other places, where it is thought to have naturalised from garden populations.

Recent colonisation of *Carex pendula* by Blackadder Water near Kelloe 2012

Carex pulicaris Flea Sedge

Moorland, native, other axiophyte

Berwickshire 1987-2013	7% monads	17% tetrads	70% hectads
Britain 1987-1999		32% tetrads	51% hectads


VC 81 Berwickshire
Most recent on top
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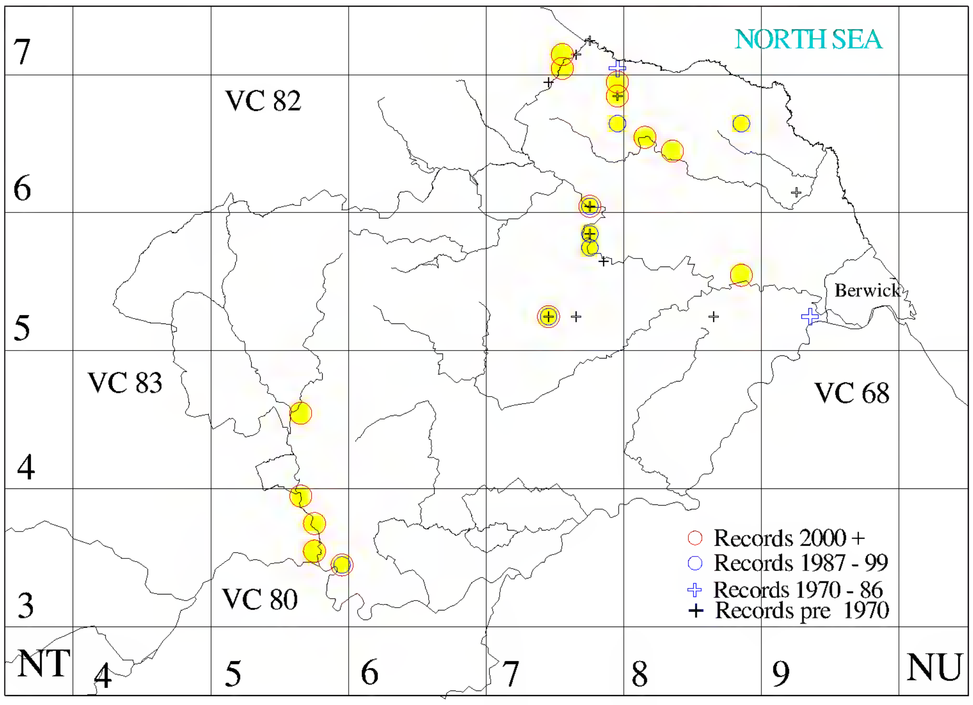
Carex pulicaris is a very widespread sedge in the hill country of Wales, northern England and Scotland but is nevertheless local at scales finer than 10km. It is found in flushes that are at least mildly base-rich. Many of the Berwickshire populations are small.

Recent survey has much enhanced our knowledge of the distribution of this species, so its suspected decline cannot be demonstrated. No evidence of recent colonisation has been observed.

Carex remota Remote Sedge

Woodland, native, rare or scarce

Berwickshire 1987-2013	16¼ sites	4% tetrads	30% hectads
Britain 1987-1999		34% tetrads	59% hectads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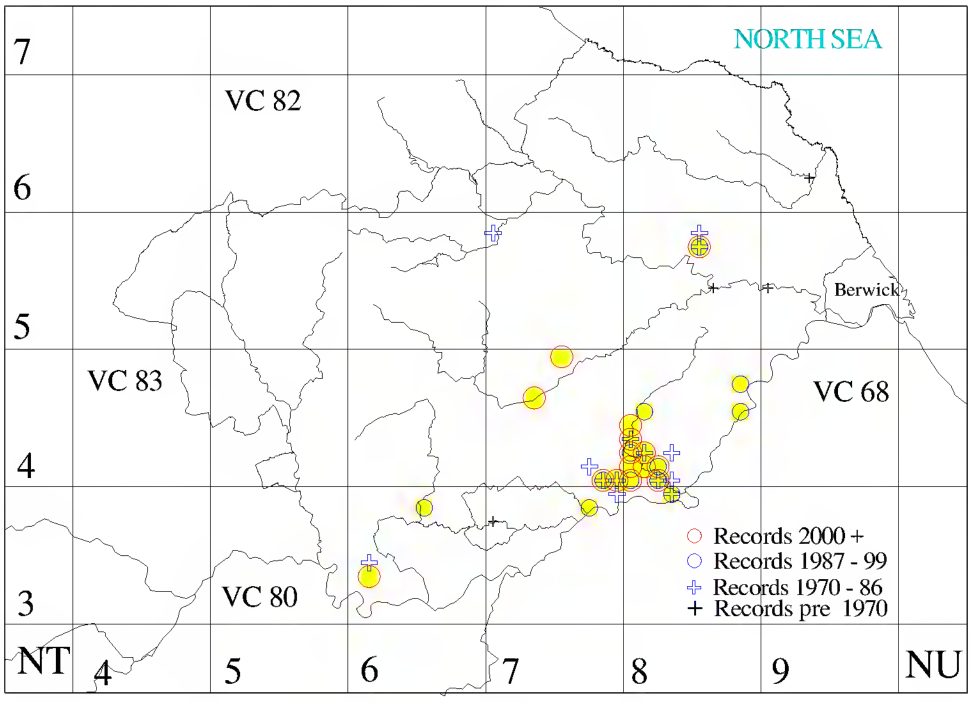
Carex remota is very widespread in wet woodland in most of England and in western Scotland, but is scarce in eastern Scotland.

It is poorly represented in Berwickshire but has been found more often in recent years than in the past. It is not clear whether it had formerly been overlooked or whether there has been a genuine range expansion. The main populations are along the lower Leader Water 53, near Abbey St Bathans on the Whiteadder Water, especially at Wild Wood 76, and in Dunglass Dean 77 and by the Pease Burn 76. It may grow under alders on level ground with *Chrysosplenium oppositifolium* Opposite-leaved Golden Saxifrage or on relatively dry banks, though often near colonies of *Allium ursinum* Ramsons.

Carex riparia Greater Pond-sedge

Wetland, native, selected axiophyte

Berwickshire 1987-2013	1% monads	4% tetrads	26% hectads
Britain 1987-1999		13% tetrads	35% hectads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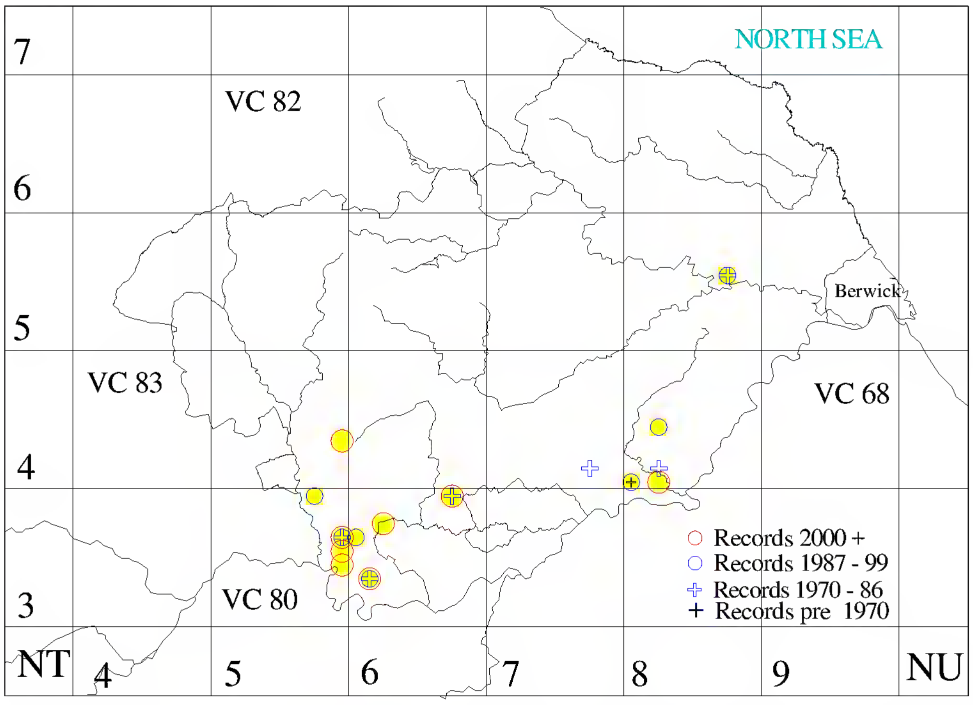
Carex riparia is widespread in eastern and central England but scarce in Scotland. The Berwickshire population is highly localised. This sedge is a prominent feature in the wetlands of the former Birgham Muir complex 84 and in haughs along the Leet Water 84 but is rare elsewhere. It occurs at Bemersyde Moss 63, in the tiny remnants of Billie Mire 85 and along the Howe Burn on the Marchmont estate 74. While it is often associated with other large sedges, especially *Carex acutiformis* Lesser Pond-sedge, it is normally the dominant species.

There is no evidence of material recent change in the Berwickshire population. The record near Redpath 75 may have been an error for *C. acutiformis*.

Carex vesicaria Bladder Sedge

Wetland, native, rare or scarce

Berwickshire 1987-2013	12¼ sites	3% tetrads	22% hectads
Britain 1987-1999		2% tetrads	17% hectads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Carex vesicaria is scattered across Britain, growing at pond margins and in lowland soligenous mires.

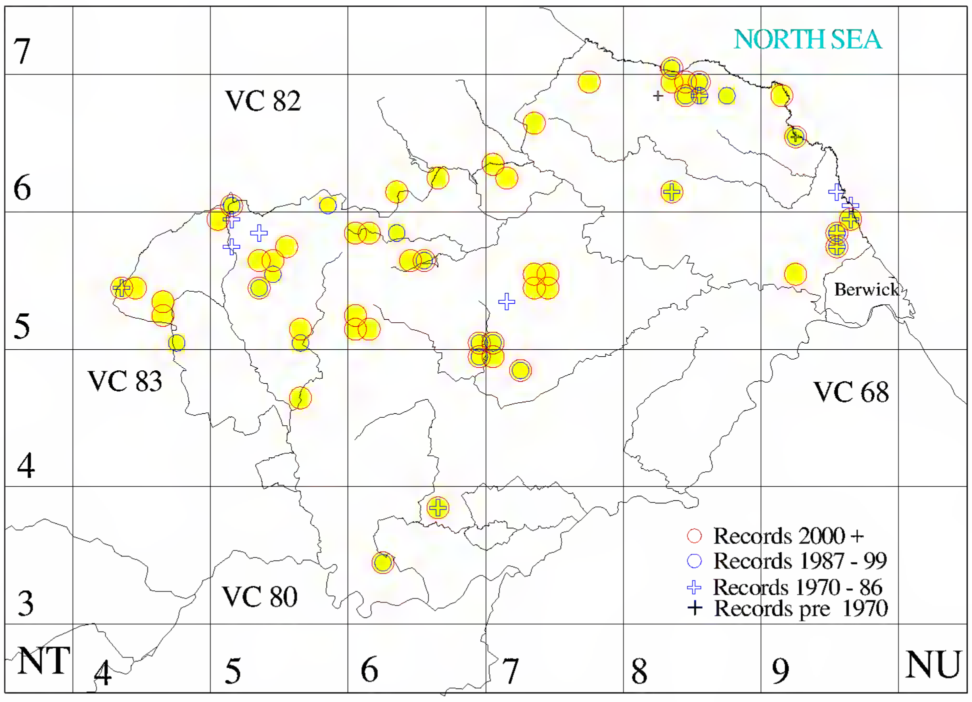
It is poorly represented in Berwickshire. As a species that was little understood until recently, it that was probably once more widespread than the records suggest. There are colonies at Redpath Moss 53, Everett Moss 54, Lurgie Loch 63 and Lithtillum Loch 84. Some of the colonies form large patches.

C. x csomadensis, the hybrid with *C. riparia*, is recorded from Lithtillum Loch 84 and *C. x involuta*, the hybrid with *C. rostrata*, from ponds at Bowshiel 76 and Middlestots 85 with an older record from Bemersyde Moss 63.

Carex viridula subsp. brachyrrhyncha (C. lepidocarpa) Long-stalked Yellow-sedge

Wetland, native, other axiophyte

Berwickshire 1987-2013	5% monads	12% tetrads	65% hectads
Britain 1987-1999		12% tetrads	28% hectads



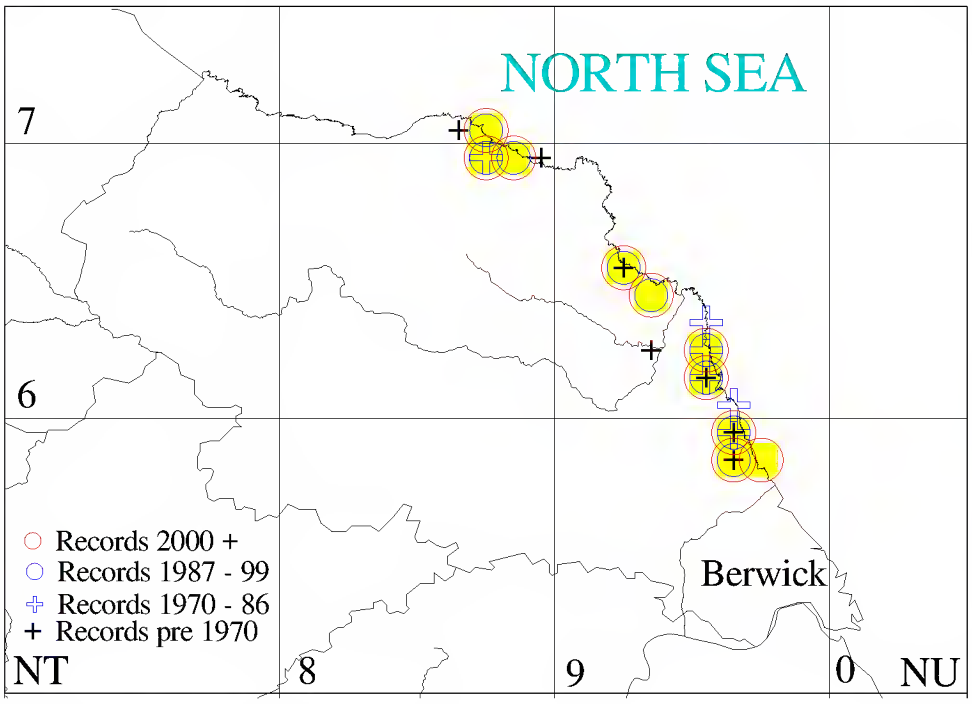
Carex viridula subsp. brachyrrhyncha has a similar British distribution to *C. hostiana* Tawny Sedge but is less frequent in the west. In Berwickshire it occupies similar base-rich flushes to *C. hostiana* Tawny Sedge but is slightly more widespread, especially near the coast. The two species hybridise and their sterile hybrid, *C. x fulva*, has been found in six monads. Unlike *C. hostiana* it can colonise the more calcareous of the unstable flushed slopes favoured by *C. flacca* Glaucous Sedge.

Recent survey has shown this sedge to be more widespread than previously recognised. The historical record is not adequate to show change but some decline seems to have been inevitable given the degradation of flush communities due to drainage and eutrophication.

Carlina vulgaris Carline Thistle

Coast, native, selected axiophyte

Berwickshire 1987-2013	0.9% monads	2% tetrads	17% hectads
Britain 1987-1999		6% tetrads	27% hectads



Carlina vulgaris is a monocarpic plant of base-rich grassland, especially in the limestone areas of southern Britain.

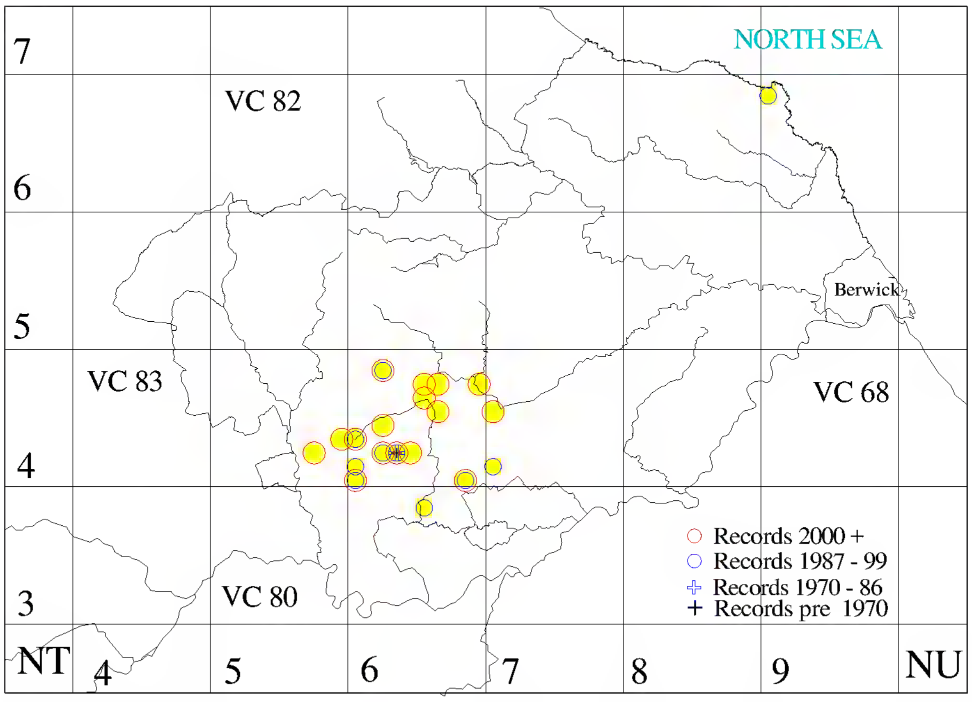
In Berwickshire it is strictly coastal, except for one historical record at the foot of the Ale Water 96. The slopes colonised are all unstable and *Carlina* exploits the habitat gaps. The grasslands colonised are among the most species-rich in Berwickshire and this species usefully defines their distribution. The largest series of colonies is below Lamberton 95, both on the sea bras and a bank facing inland. Others are on the sea braes north of Burnmouth 96, at Killiedraught Bay 96, in Fleurs Dean 96 and at Lumsdaine Shore 86, 77.

There is little evidence of decline, though scrub invasion is becoming a threat to some colonies. The colonies below Lamberton have thrived in recent years following some relaxation in the grazing regime, but some are now threatened by scrub invasion.

Catabrosa aquatica Whorl-grass

Aquatic, native, rare or scarce

Berwickshire 1987-2013	15¾ sites	5% tetrads	22% hectads
Britain 1987-1999		4% tetrads	16% hectads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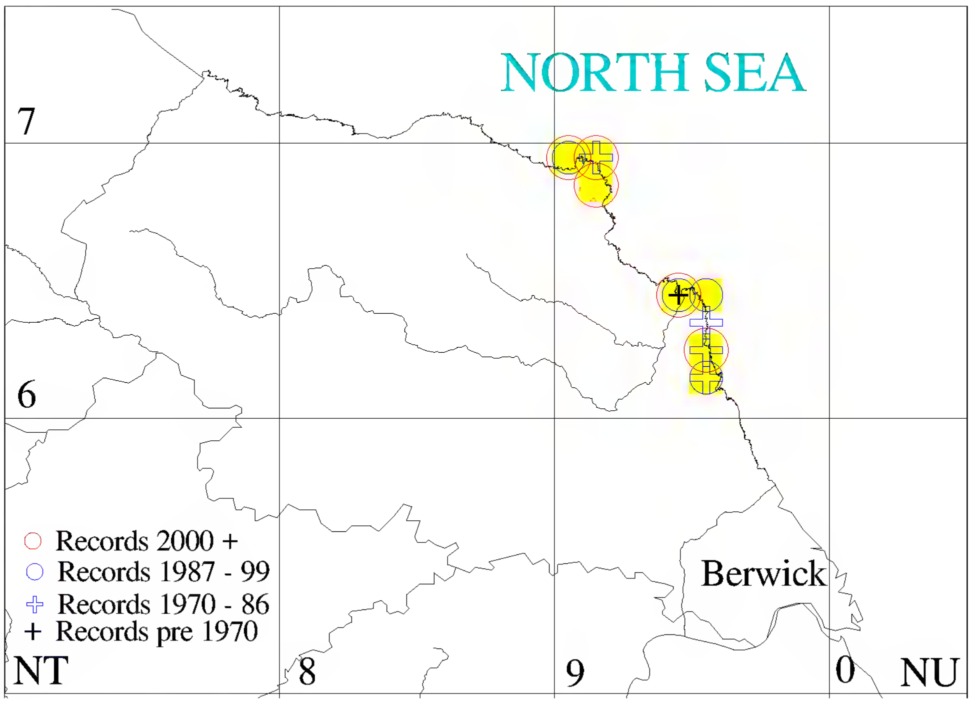
Catabrosa aquatica is quite widespread in England but largely coastal in the north where it is especially characteristic of the sandy mouths of burns at the sea.

This grass is now well represented in Berwickshire in the Gordon/Greenlaw area 64. But it was long-thought to have been confined to one small patch in the Tower Burn by Gordon Moss 64 where cattle were watered. The Gordon Moss colony extended spectacularly when the ditches round the moss were cleaned. The grass seems to have been spreading but it may have been overlooked in the past. Large colonies occur along the burn at Everett Moss 54, 64, along the Hareford Burn near Gordon Moss 64 and along the Hexpathdean Burn 64. Interestingly, there are also small colonies in spring heads at Hareheugh Craigs 64 and Hume Craigs 74. *Catabrosa* appeared in 1993 in the reed bed at Mire Loch, St Abbs Head 96 after disturbance when a walkway was being laid, but did not persist.

Catapodium marinum Sea Fern-grass

Coast, native, rare or scarce

Berwickshire 1987-2013	6 sites	1% tetrads	4% hectads
Britain 1987-1999		3% tetrads	13% hectads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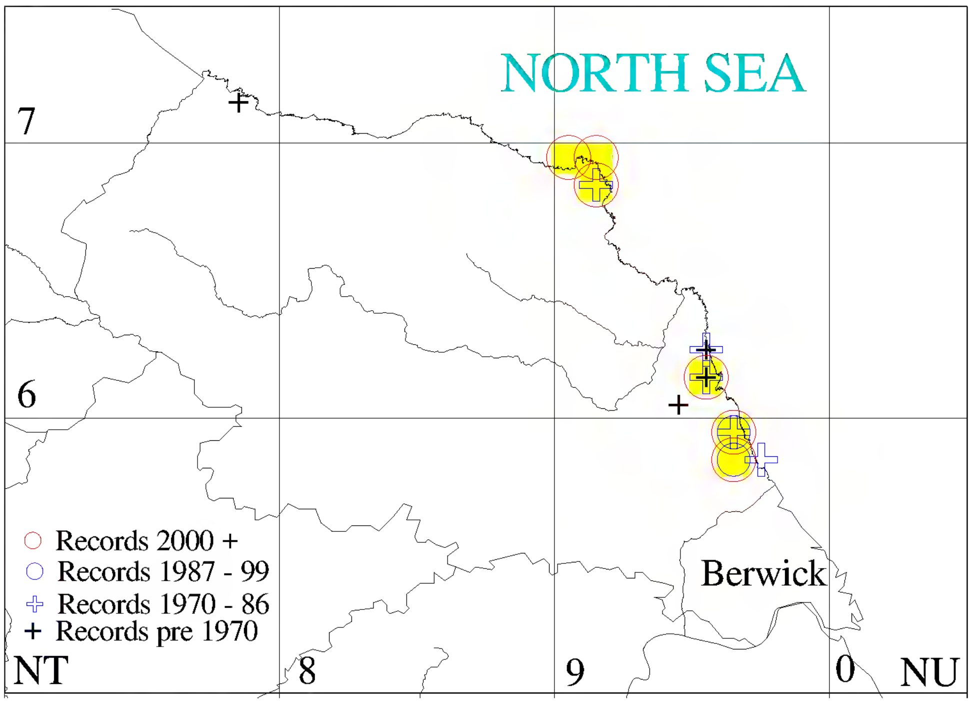
Catapodium marinum is widely distributed around the British coast but is much less common in the north. Its habitat is dry coastal grassland and cliffs.

There are two extended populations in Berwickshire. It occurs on eroding slopes on extreme headlands at St Abbs Head 96 and is quite frequent on the coast near Eyemouth 96, also growing on a few walls in the town itself. There are few historical records, as it was formerly confused with *C. rigidum* Fern-grass.

Catapodium rigidum Fern-grass

Coast, native, rare or scarce

Berwickshire 1987-2013	4 sites	0.9% tetrads	9% hectads
Britain 1987-1999		11% tetrads	35% hectads



Catapodium rigidum is widespread in England especially in the east but is confined to the southeast coast in Scotland. It is a grass of dry grassland.

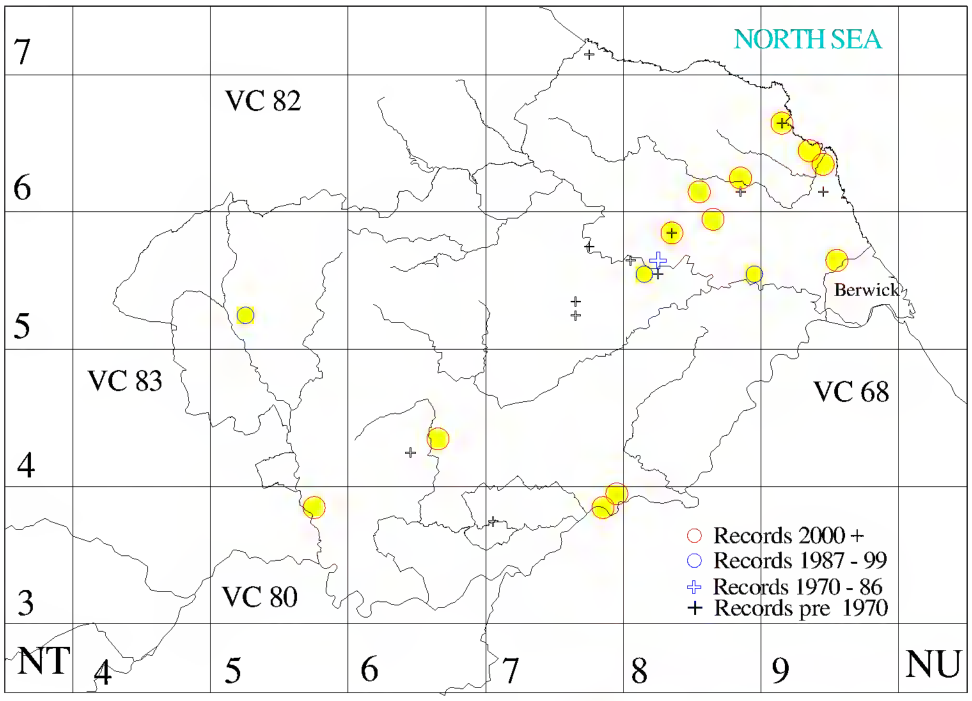
There are three Berwickshire populations of this annual. It is rather scarce on the inland facing slopes at St Abbs Head 96, both in screes below the Lighthouse road and on the knowes towards the south end of Mire Loch, quite scarce on eroding slopes on the sea braes north of Burnmouth 96 with *Thymus* Wild Thyme and on similar slopes at Hilton Bay 95 where it is affected by the engineering works to stabilise the slopes to protect the railway above. These works at first led to an increase in its abundance both because of the disturbance and because it colonised the concrete blocks of the retaining wall itself along with *Carlina vulgaris* Carline Thistle. The slopes have now stabilised and the *Catapodium* has declined.

Catapodium rigidum **Hilton Bay 2010**

Centaurea cyanus Cornflower

Arable, archaeophyte, rare or scarce, British rare

Berwickshire 1987-2013	1% monads	4% tetrads	35% hectads
Britain 1987-1999		2% tetrads	14% hectads



Centaurea cyanus was formerly quite a widespread weed of arable land in Britain but almost died out following the introduction of efficient seed cleaning and the use of herbicides. It has recently been widely introduced in wildflower mixes sown in gardens, in public places and in setaside fields.

Two apparently ancient populations are known in Berwickshire. One is in a field near Edrom 85 where a few scattered plants were found in 1998. The other at Lintlaw 85 is quite remarkable. Around 1834 Dr George Henderson entered in his notebook: 'In the fields about Lintlaw we have observed a greater abundance of Corn Bluebottle or Blawort [Cornflower] *Centaurea cyanus* than we have seen anywhere else in the neighbourhood'. It was recorded there again in 1893. Unaware of these records, Ia in Cowe refound it at Lintlaw NT8358 in 2004 and successive years to 2013 in a field called Pump Close and sometimes also in adjacent fields. In 2013 the *Centaurea* flowers were so plentiful that they appeared as a blue haze across the centre of an otherwise weed-free wheat crop when viewed from the road.

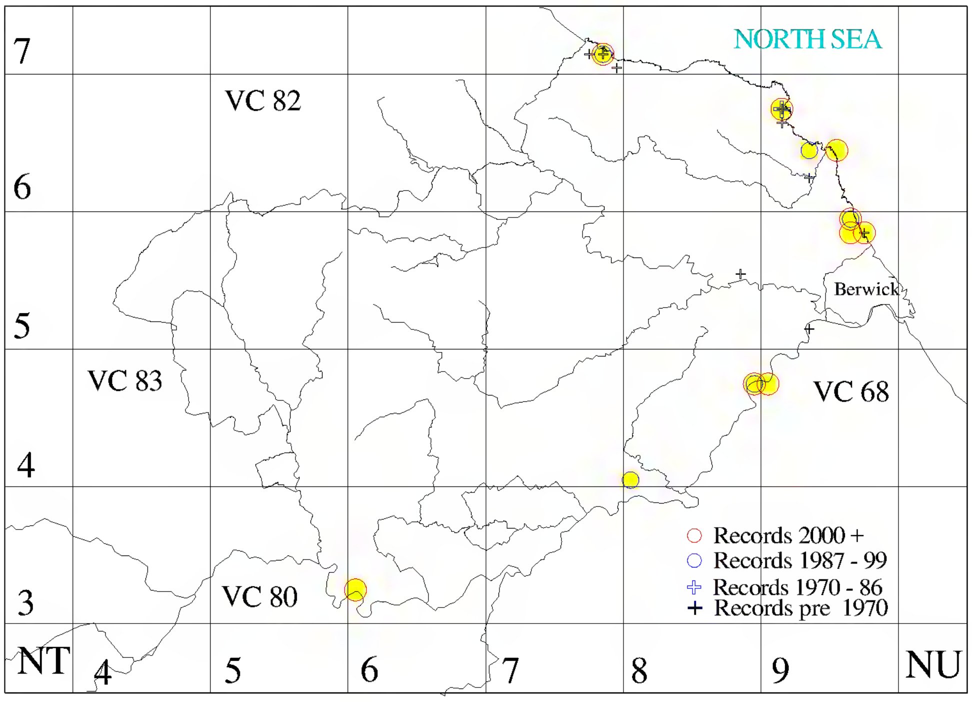
Lintlaw
Centaurea cyanus
08/07/2013
NT832582

This history suggested that the population has acquired some herbicide resistance. This was tested in 2014 by Rothamsted Research. The seeds germinated very well and the plants were very even. Control of the plants was slightly lower than Rothamsted's susceptible standard and Granstar (which contains *tribenuron*, as in Ratio X, the herbicide used by the farmer) was more effective than Lorate, which contains *metsulfuron*. While Rothamsted did not show any clear evidence of resistance, which is curious, there was an indication of partial insensitivity, which may be consistent with the survival of the *Centaurea* in the field.

Centaurium erythraea Common Centaury

Coast, native, rare or scarce

Berwickshire 1987-2013	9 sites	2% tetrads	26% hectads
Britain 1987-1999		29% tetrads	56% hectads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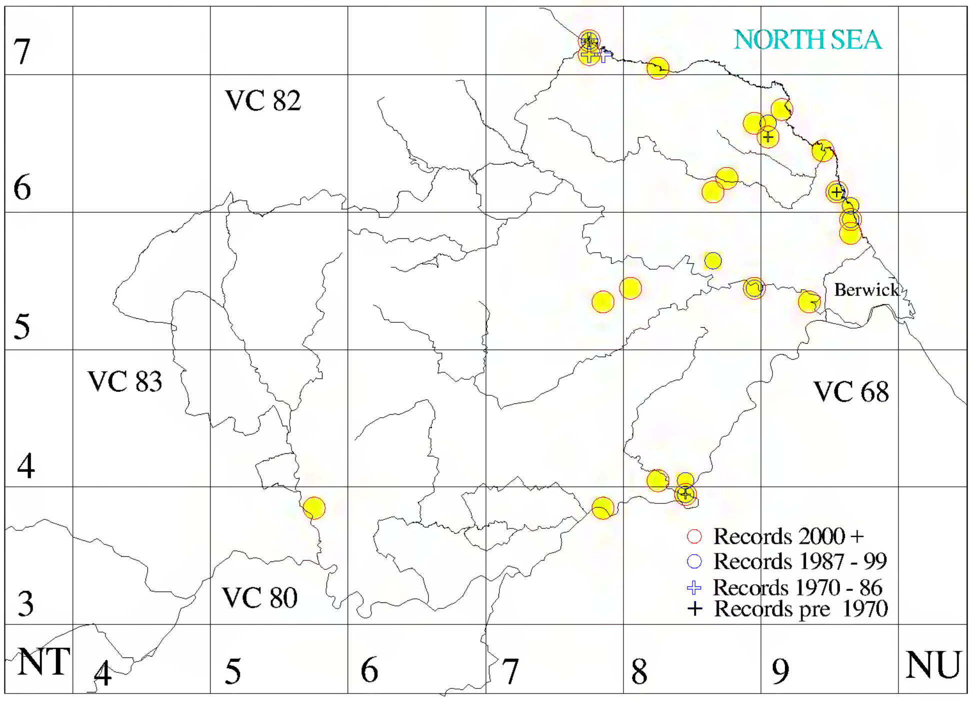
Centaurium erythraea is very widespread in England but much less so in Scotland. It grows in sandy or calcareous grassland.

It is largely coastal in Berwickshire with only a few modest colonies and appears to be in decline. The Lamberton limestone 95 holds the largest population where it is sometimes associated with *Carlina vulgaris* Carline Thistle. It also occurs at Cove 77 on crumbling banks, on a steep slope in Starney Bay at St Abbs Head 96, near Eyemouth 96 and inland by the River Tweed on eroding banks at Blount Bank 84, 94 and at Mertoun Bridge 63.

Centranthus ruber Red Valerian

Coast, neophyte, intrusive neophyte

Berwickshire 1987-2013	2% monads	6% tetrads	48% hectads
Britain 1987-1999		14% tetrads	42% hectads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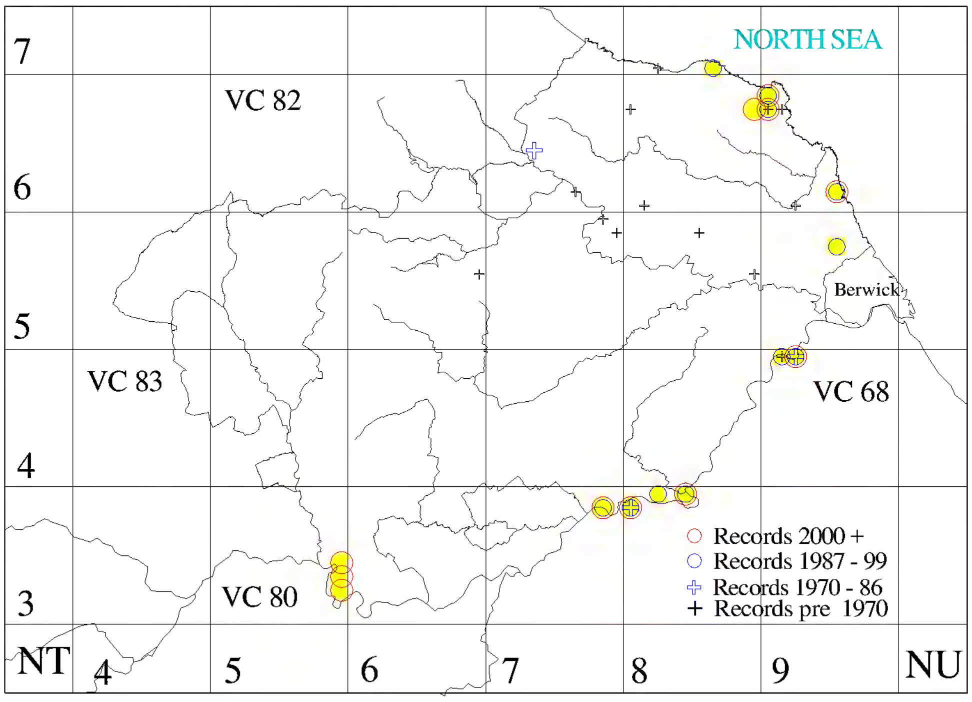
+ Records pre 1970

Centranthus ruber colonises rocky coastal habitats, coastal shingle, walls and railway ballast. It is very widespread in England but much more localised in Scotland, where more of the populations are urban. This is a popular garden plant in coastal areas as it is colourful and very hardy in exposed situations. First recorded in Berwickshire in 1939 it has now become seriously out of hand on the sea braes near Burnmouth 96, quite the most species-rich grassland in the county, and at Ramsheugh Bay 77, another botanically diverse site. It is often tolerated on walls and even encouraged there, but at some risk to the pointing. It is present in St Abbs village 96 and on walls at Northfield car park whence it could spread to St Abbs Head 96. Other coastal stretches are also at risk.

Cerastium arvense Field Mouse-ear

Grassland, native, rare or scarce

Berwickshire 1987-2013	11 sites	4% tetrads	35% hectads
Britain 1987-1999		6% tetrads	16% hectads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✚ Records 1970 - 86
+ Records pre 1970

Cerastium arvense has a scattered distribution over the eastern half of Britain where it grows in sandy or calcareous grassland.

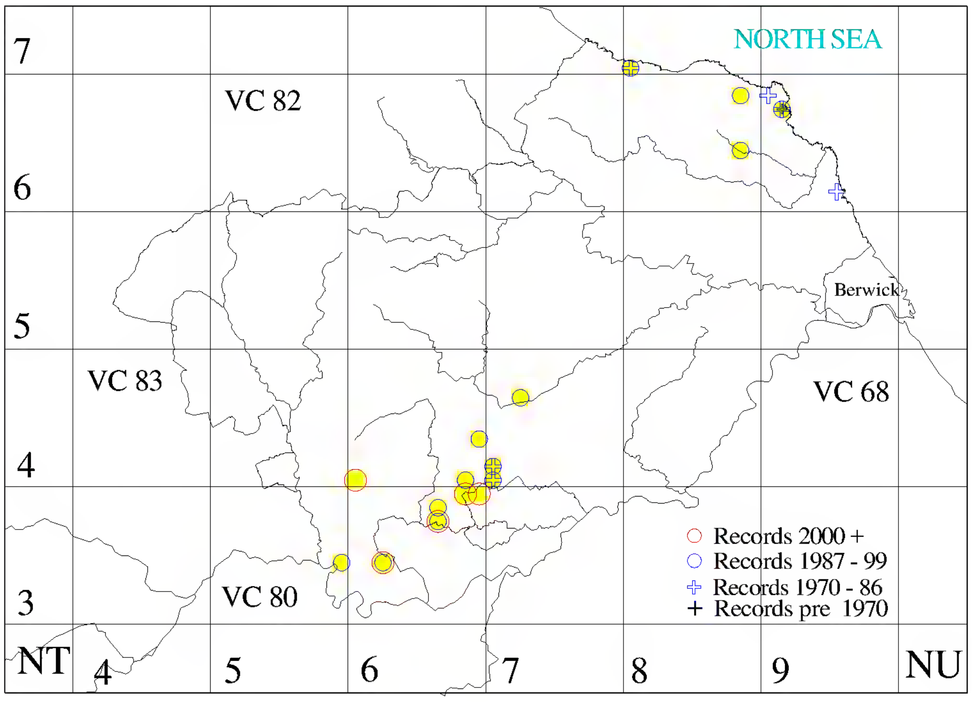
There are just a few small colonies in Berwickshire none of which are very notable as the habitat is fragmented. The best of these are at Westerside 86, especially under whins along the side of the lane with *C. x maueri*, the hybrid with *C. tomentosum* Snow-in-summer, and on steep slopes around Millar's Moss Reservoir 96. There are other colonies on Bemersyde Hill at Scotts View 53, in several places by the Tweed between Springhill 73 and Coldstream 84, most notably along the top of a limestone crag opposite Carham 84, below Fishwick Mains 94 and at Burnmouth 96.

It was formerly considerably more widespread in Berwickshire and further losses are likely.

Cerastium semidecandrum Little Mouse-ear

Grassland, native, rare or scarce

Berwickshire 1987-2013	11 sites	4% tetrads	30% hectads
Britain 1987-1999		7% tetrads	27% hectads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✚ Records 1970 - 86
+ Records pre 1970

Cerastium semidecandrum is rather local in Britain and more widespread in the east, especially in Scotland where it is quite scarce. It is a plant of rocky knowes and drought-prone grassland.

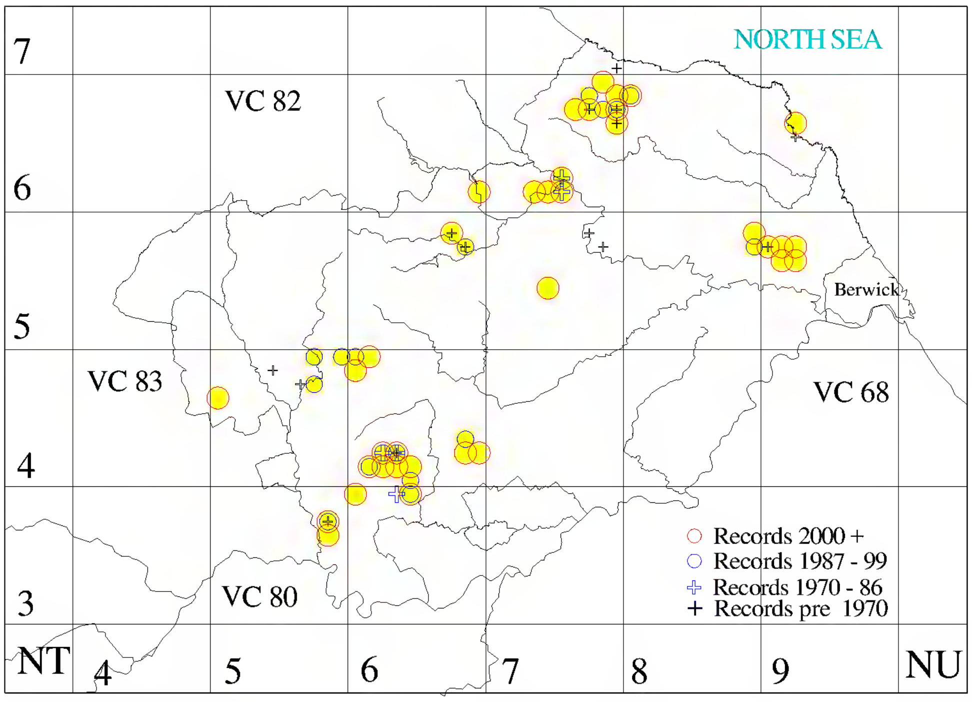
In Berwickshire it has not been seen recently near the coast and the remaining small colonies lie on the Kelso traps. Sites include Butchercote Craigs 63, along the cliff at Muckle Thairn 63 and Hareheugh Craigs 64.

The apparently severe recent losses may be due to eutrophication, but this is an annual species that can be affected by weather patterns, as summer drought is often needed to open up habitat gaps for it to germinate in.

Ceratocapnos claviculata Climbing Corydalis

Woodland, native, selected axiophyte

Berwickshire 1987-2013	4% monads	8% tetrads	52% hectads
Britain 1987-1999		10% tetrads	31% hectads



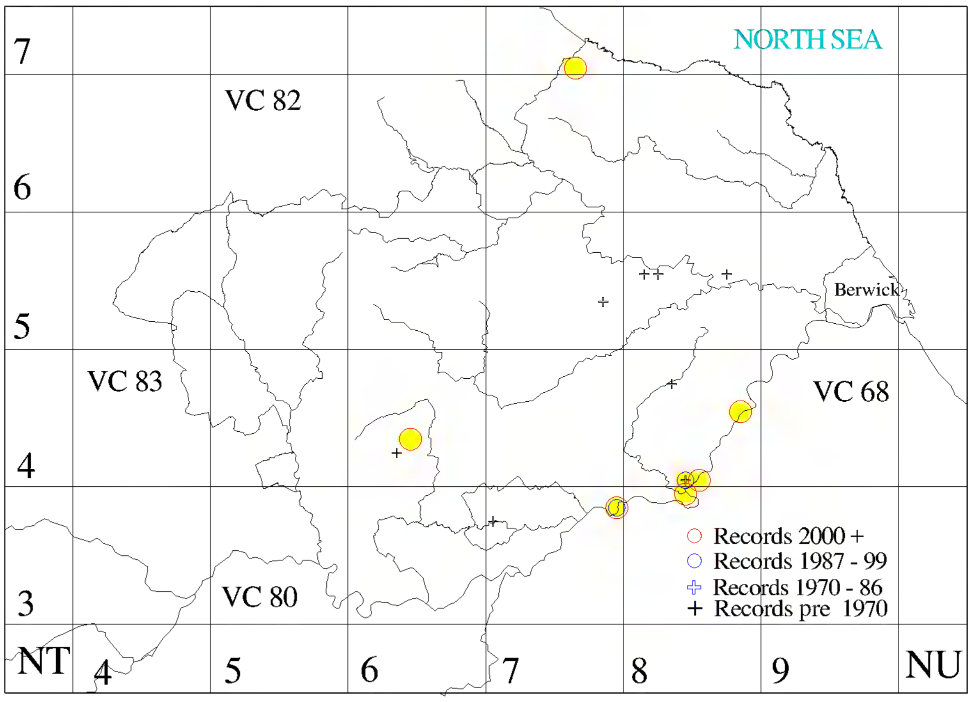
Ceratocapnos claviculata is widespread but local in Britain. It is a scrambling annual that finds habitat gaps in acidic woodland and screes and amongst rocks and scrub. It has a curiously localised distribution in Berwickshire but can be plentiful where it occurs. The largest population is in the Gordon Moss area 64 but it is more plentiful there in the pinewoods of the Mellerstain estate than in wet woodland and whins. It occurs at the foot of the screes on the Black Hill of Earlston 53, in pines at Spottiswoode 64, in screes around Abbey St Bathans 76, in mixed woodland around the Pease Burn 76 and in birchwood and wet woodland near Edington 95. The isolated colonies include one on the coast, where it grows under bracken at Linkim Shore 96. This seems to be a relatively mobile species over short distances and one which responds well to disturbance, such as woodland felling. There is no evidence of decline and it may even be increasing modestly, though inadequate survey in the past prevents any quantification of change.

***Ceratocapnos claviculata* in burnt whins Lightfield 2007**

Chelidonium majus Greater Celandine

Ruderal, archaeophyte, rare or scarce

Berwickshire 1987-2013	4¾+3 sites	2% tetrads	22% hectads
Britain 1987-1999		25% tetrads	49% hectads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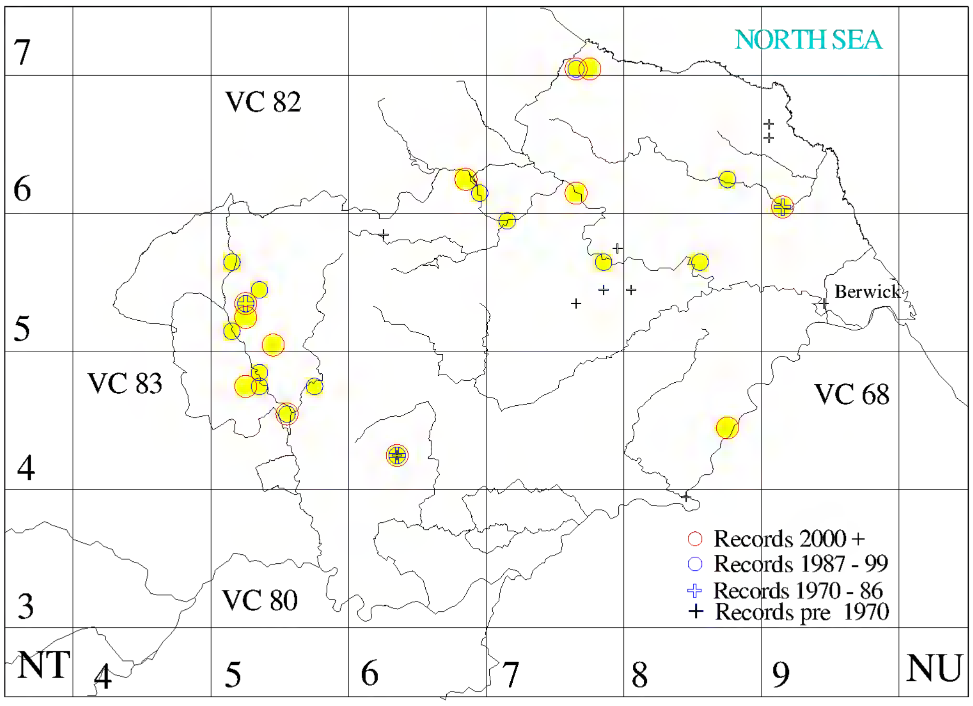
Chelidonium majus is very widespread in England but very local in Scotland. It is found in dry ruderal habitats around habitation.

C. majus is very poorly represented in Berwickshire. A double-flowered form found in or near gardens seems to have been favoured more recently than the single-flowered form which is more likely to relate to old introductions. The latter is best known in a lane at Birgham 73 and in and around Coldstream 84, 85.

Chenopodium bonus-henricus Good-King-Henry

Ruderal, archaeophyte

Berwickshire 1987-2013	2% monads	6% tetrads	48% hectads
Britain 1987-1999		23% tetrads	7% hectads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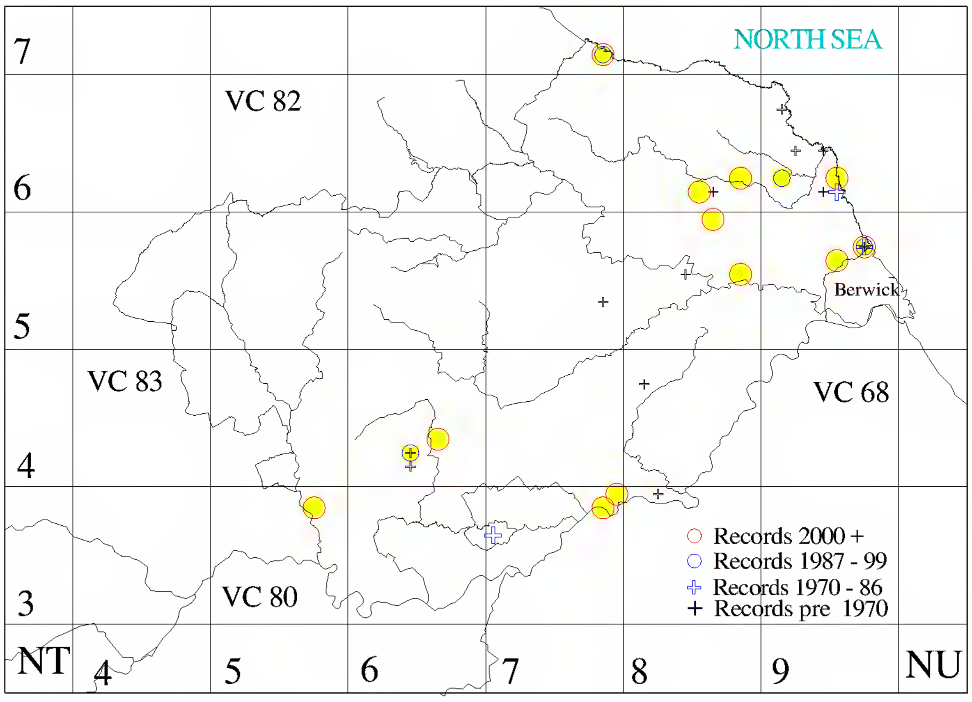
Chenopodium bonus-henricus is quite widespread in much of England and lowland Scotland, usually in ruderal habitats and especially near old farmsteads where it was once cultivated for its edible leaves.

It is infrequent in Berwickshire. Of interest is the naturalised population on the gravels of the Leader Water where it is occasional, especially near Lauder 54.

Chrysanthemum segetum (Glebionis segetum) Corn Marigold

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	1% monads	3% tetrads	35% hectads
Britain 1987-1999		10% tetrads	31% hectads



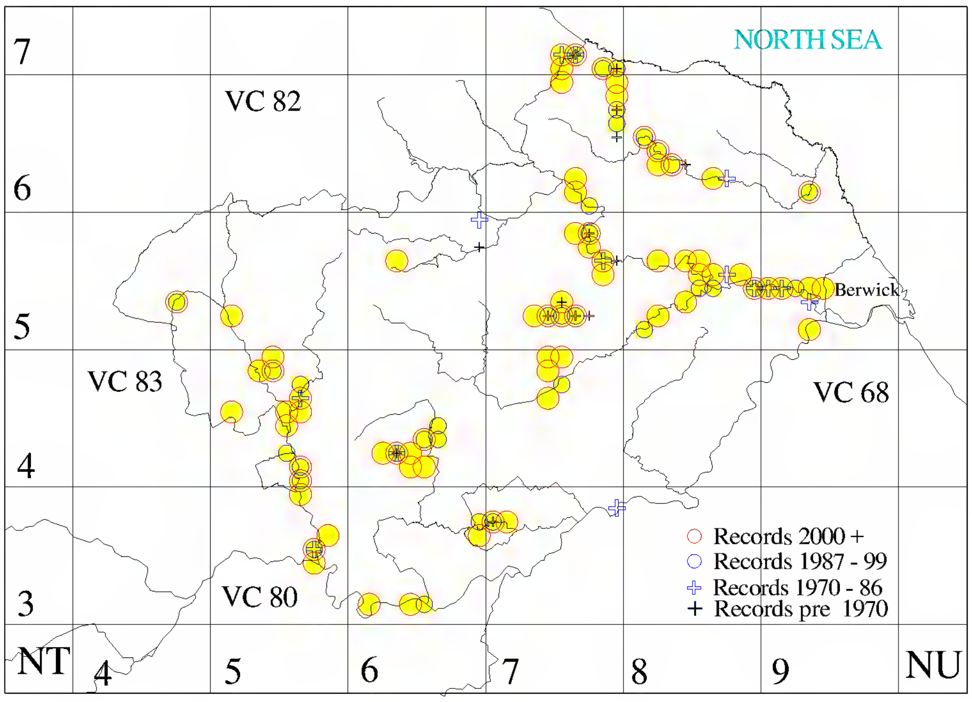
Chrysanthemum segetum was until relatively recently quite common as an arable weed in many parts of Britain. It has now become scarce in most areas but is increasingly included in wildflower mixes sown in gardens, in public places and in setaside or game strips in arable fields.

It was apparently never more than very locally plentiful in Berwickshire. Since 2000 it has only been seen as an archaeophyte near Cove 77, at Sunnyside 86 and below Lamberton 96. A large colony was found near Burnmouth 96 in 2014 where an old headland had been ploughed. All other recent records have been introductions, sown with other showy annuals.

Chrysosplenium alternifolium Alternate-leaved Golden-saxifrage

Woodland, native, Berwickshire fine

Berwickshire 1987-2013	7% monads	16% tetrads	70% hectads
Britain 1987-1999		5% tetrads	19% hectads



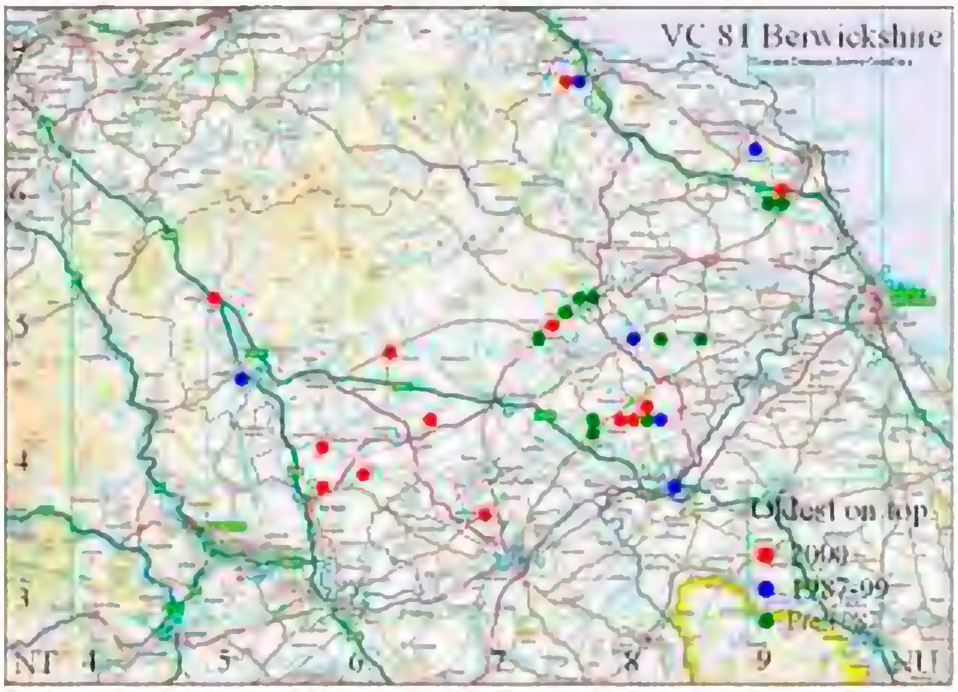
Chrysosplenium alternifolium is only locally frequent in Britain. It is a plant of wet woodland with water movement and sometimes of upland flushes. It very often grows with *C. oppositifolium* Opposite-leaved Golden-saxifrage but requires less-acidic conditions than that species. In Berwickshire it is almost always found within the flood plain of rivers and burns in woods where natural plant communities survive. While most of the colonies appear long-established, others, particularly those at the river's edge, are small and may be more or less casual. One colony only is known from an upland flush: at 350m near the source of the Watch Water 65.

As indicated, some degree of mobility is apparent by the river's edge. Much better survey has been achieved recently, so no valid trends are available. Nevertheless, the absence of this species from most of the River Tweed is testimony to a loss of range due to past woodland destruction and much of the habitat currently colonised in the county seems now to be marginal on account of continuing disturbance and the spread of *Allium paradoxum* Few-flowered Garlic.

Cicerbita macrophylla Common Blue-sow-thistle

Grassland, neophyte, prominent neophyte

Berwickshire 1987-2013	2% monads	6% tetrads	52% hectads
Britain 1987-1999		18% tetrads	4% hectads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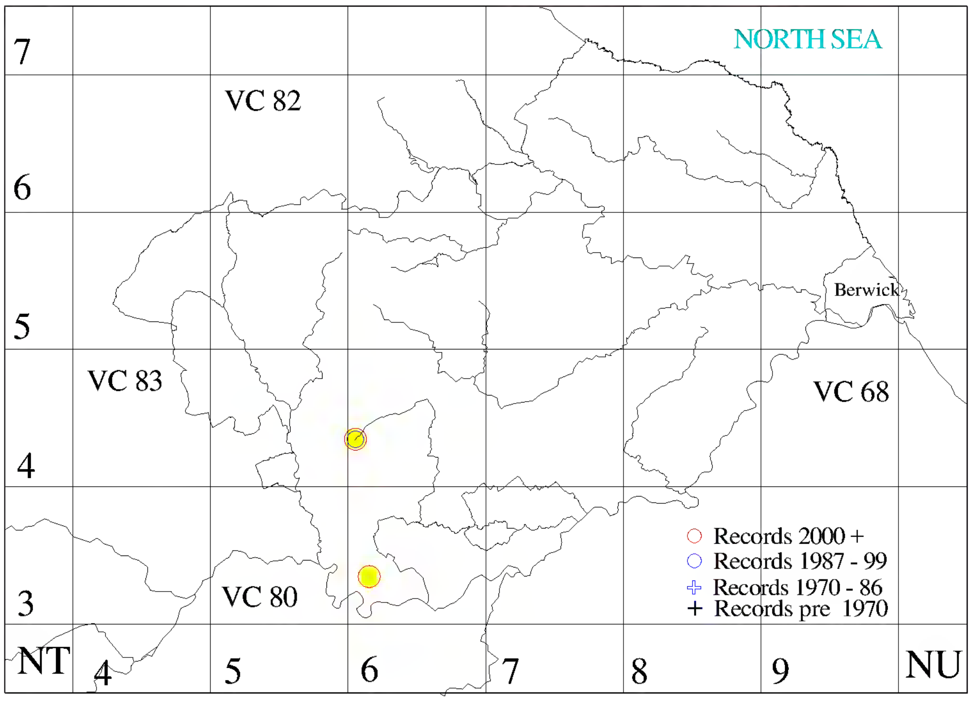
Cicerbita macrophylla is a very vigorous rhizomatous perennial that has become quite frequent across much of Britain as a naturalized garden throw-out.

It has been found more frequently in Berwickshire in recent years. Most of the records are of obviously dumped material but clusters of records in some areas suggest further dispersal. Some of this dispersal is suspected to relate to material being caught up in the wheels of tractors, especially where they run onto lane-side verges to allow other vehicles to pass, however dispersal by windblown seed may also be taking place. It is not usually a riverside plant.

Cicuta virosa Cowbane

Wetland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		0.2% tetrads	2% hectads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✣ Records 1970 - 86
+ Records pre 1970

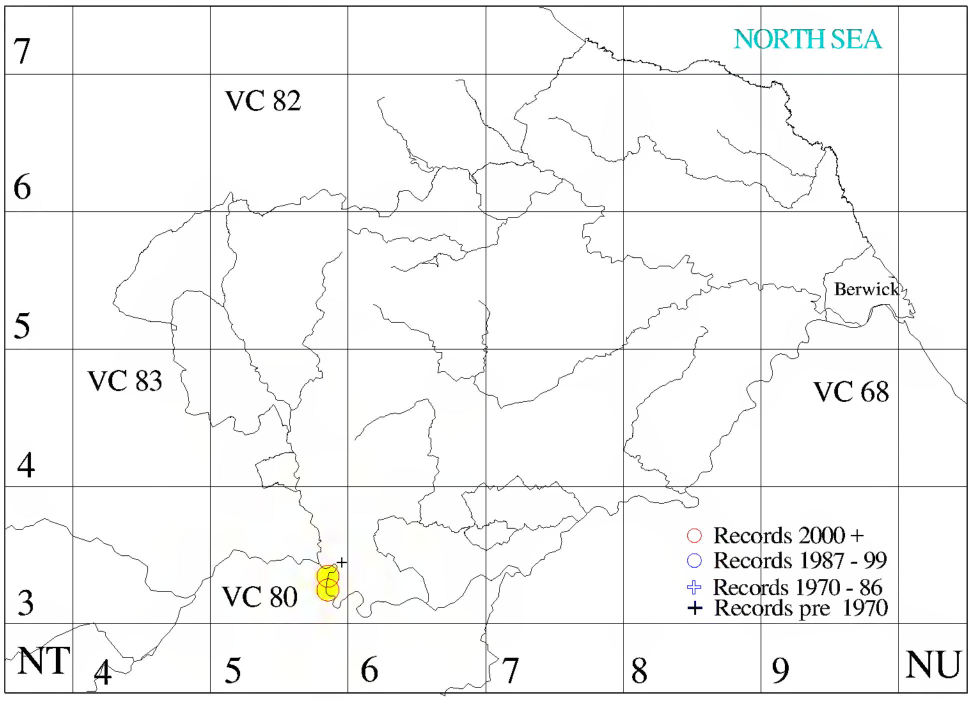
Cicuta virosa is very localised in Britain, growing in watery mires.

Berwickshire boasts a fine colony at Everett Moss 54 where it extends from a fen area into inaccessible swamp. Then in 2007 it was reported from Bemersyde Moss 63 in *Carex acutiformis* Lesser Pond-sedge swamp. It is not known whether it has been overlooked there in the past due to its inaccessible habitat or whether this represents recent colonisation.

Circaea x intermedia = C. alpina x lutetiana Upland Enchanter's-nightshade

Woodland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		5% tetrads	13% hectads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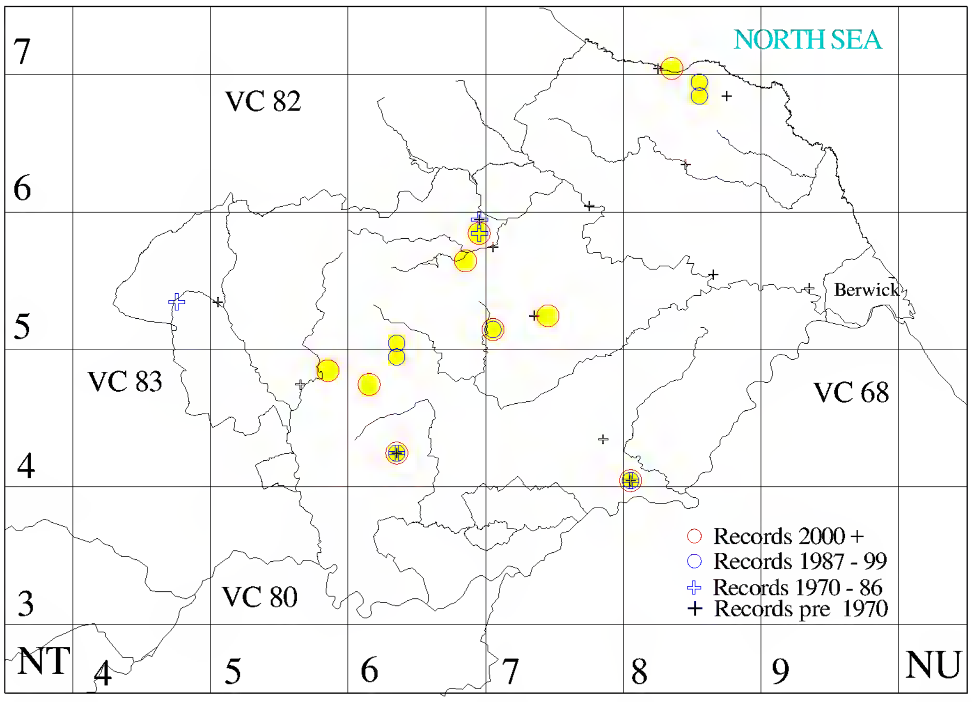
Circaea x intermedia is widespread in parts of western Britain, especially in Scotland and is a plant of woods or shaded rocky habitats.

It has recently been refound in Berwickshire by the Tweed at Gaitheugh 53 at the site of the only confirmed historical record.

Cirsium heterophyllum Melancholy Thistle

Wetland, native, rare or scarce

Berwickshire 1987-2013	10¾+¼ sites	3% tetrads	30% hectads
Britain 1987-1999		9% tetrads	18% hectads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Cirsium heterophyllum is a widespread upland plant of northern Britain most characteristic of wet base-rich meadows and burnsides where it is often associated with *Geranium sylvaticum* Wood Crane's-bill and *Trollius europaeus* Globeflower.

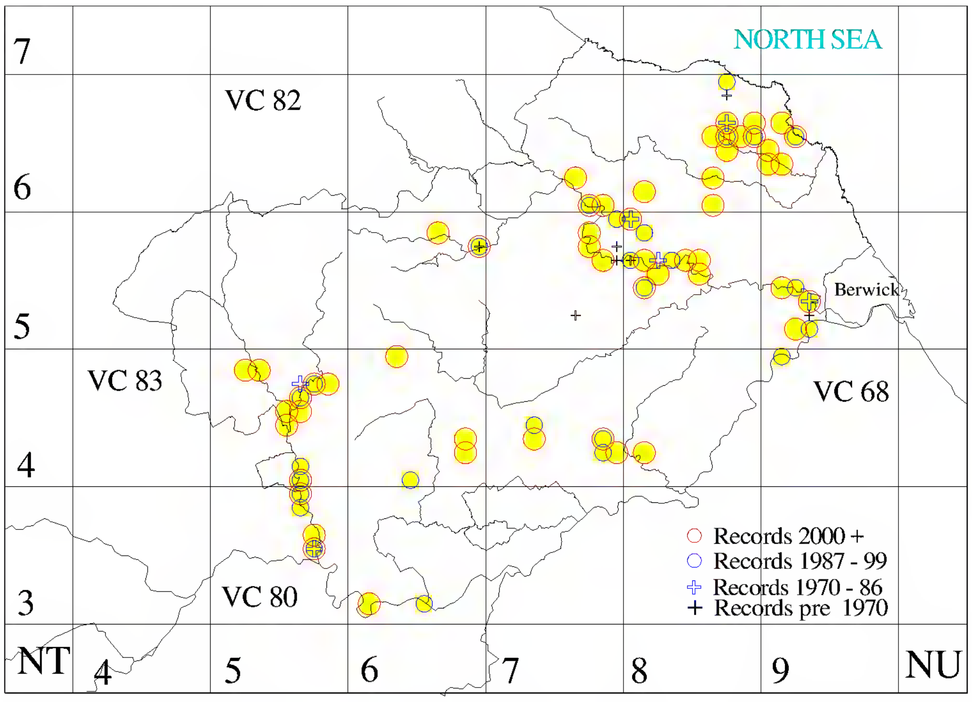
Although relatively widespread in the west of the Scottish Borders, it is now very poorly represented in Berwickshire. The best remaining colonies are in Gordon Moss 64, Birgham Wood 84 where one of two patches has been lost to a new pond, and on the sea braes at Lansey Bank near Redheugh 87. It also occurs by the Brunta Burn 54, in Sheriffmoor Plantation 64, by the Crook Burn 65, in woodland above the Watch Water 65, by the Kettleshiel Burn 75 and in Langtonlees Cleugh 75. The only association with *Trollius* is by the Crook Burn.

The English name seems a curious one for a plant with notably upright stems and flower heads until it is realised that it is so called because, under the doctrine of signatures, it was considered a cure for the melancholy.

Claytonia sibirica Pink Purslane

Woodland, neophyte, prominent neophyte

Berwickshire 1987-2013	6% monads	14% tetrads	61% hectads
Britain 1987-1999		13% tetrads	33% hectads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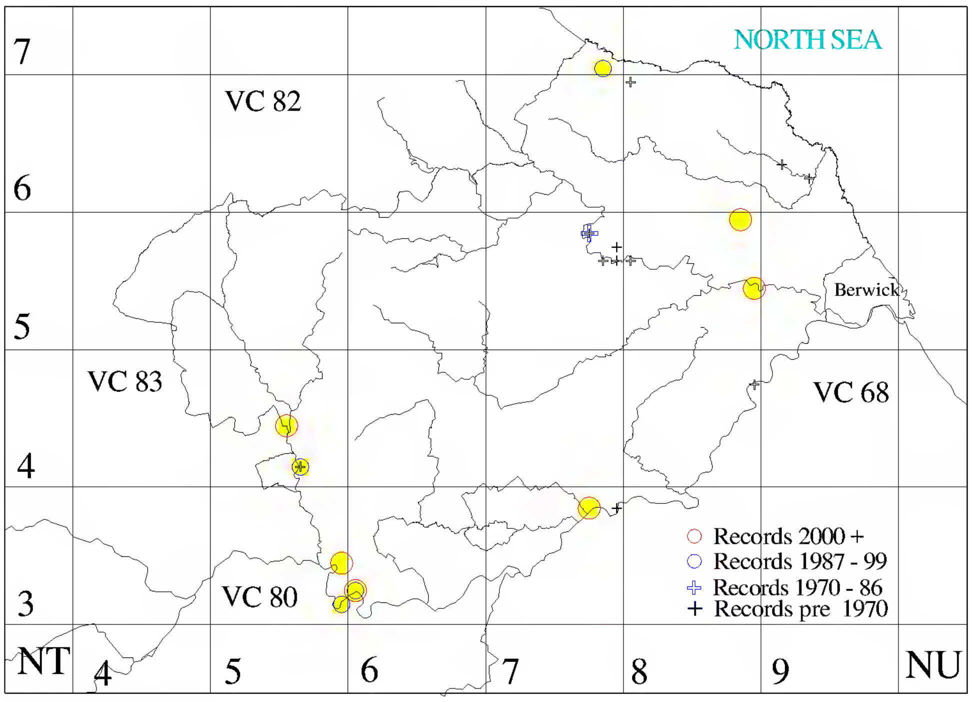
+ Records pre 1970

Claytonia sibirica is now widespread in the southwest and northwest of England and in southern, central and eastern Scotland. It has naturalised widely in Berwickshire since it was first recorded in 1936. It has blended-in well with the native spring flowers of woodland and is most prominent in riverside woodland by the Leader, Whiteadder and Ale Waters with its seeds being mainly dispersed by floods. It can also form a monoculture under conifers as in the forestry above our home at Clarilaw, Roxburghshire NT51, but is rare in this habitat as it has difficulty in finding a way to get its seed to such places. It is not generally distributed by the Tweed though it occurs in the policies of Mertoun House 63 and Paxton House 95.

Clinopodium vulgare Wild Basil

Grassland, native, rare or scarce

Berwickshire 1987-2013	6¾+1 sites	2% tetrads	26% hectads
Britain 1987-1999		16% tetrads	34% hectads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VC 82
VC 83
VC 68
VC 80
Berwick
○ Records 2000 +
○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

Clinopodium vulgare is widespread in southern Britain but scarce in the north. It is a plant of dry base-rich grassland.

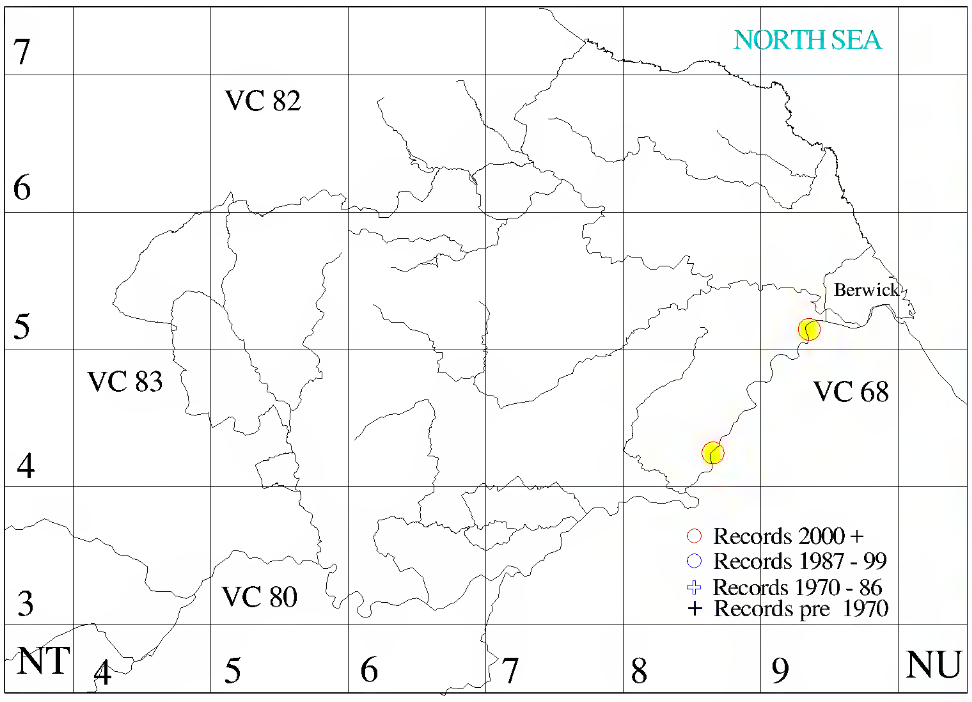
C. vulgare is poorly represented in Berwickshire. All colonies are small and typically occur on south-facing steep eroding banks where they are vulnerable to major landslips. Sites are Gaitheugh 53, the Leader Water near Whitslaid 54, near Mertoun Bridge 63, above the Tweed near Lochton 73 as a strong colony with *Hypericum hirsutum* Hairy St John's-wort and on Pear Bank by the Whiteadder Water near Edington Mill 85. It has been introduced at the former Causewaybank gravel pit 85.

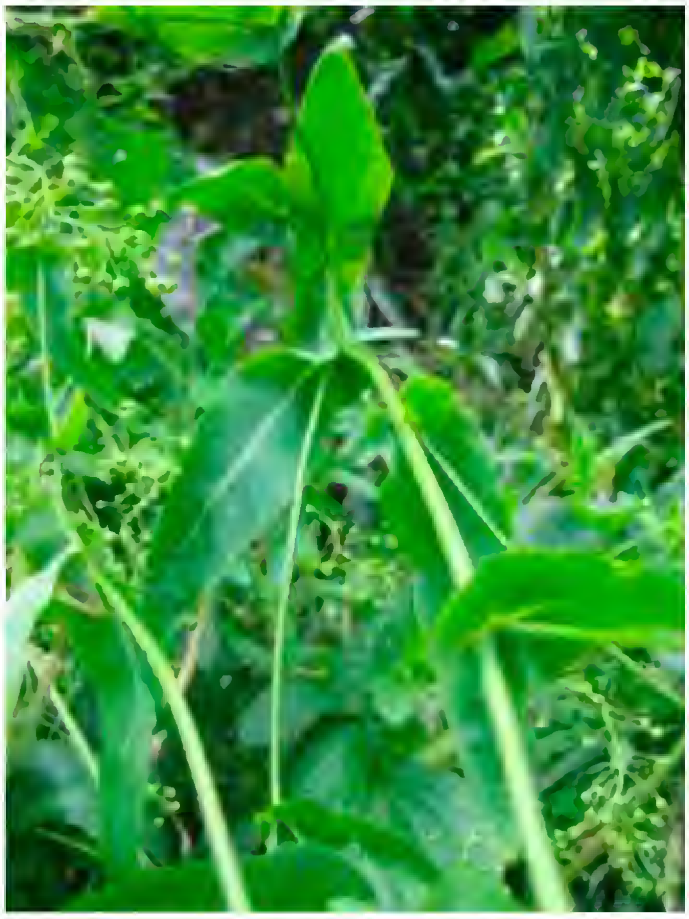
The colony in Tower Dean 77 appears to have been lost recently. It was last seen in 1988.

Cochlearia megalosperma Tall Scurvygrass

Riverside, neophyte

Berwickshire 1987-2013	2 sites	1% tetrads	9% hectads
Britain 1987-1999		0.004% tetrads	0.1% hectads





Cochlearia megalosperma is endemic to Morocco and Southeast Spain. It seems to have first naturalised in Britain in ruderal habitats by escaping from the Pharmacy Garden of the University of Nottingham, where it had been sent as seed from a collection at Gatersleben, Germany. The source of later colonies is not known but it was being offered for sale by Salley Gardens organic herb nursery, which is not far from the university and had obtained seed from there.

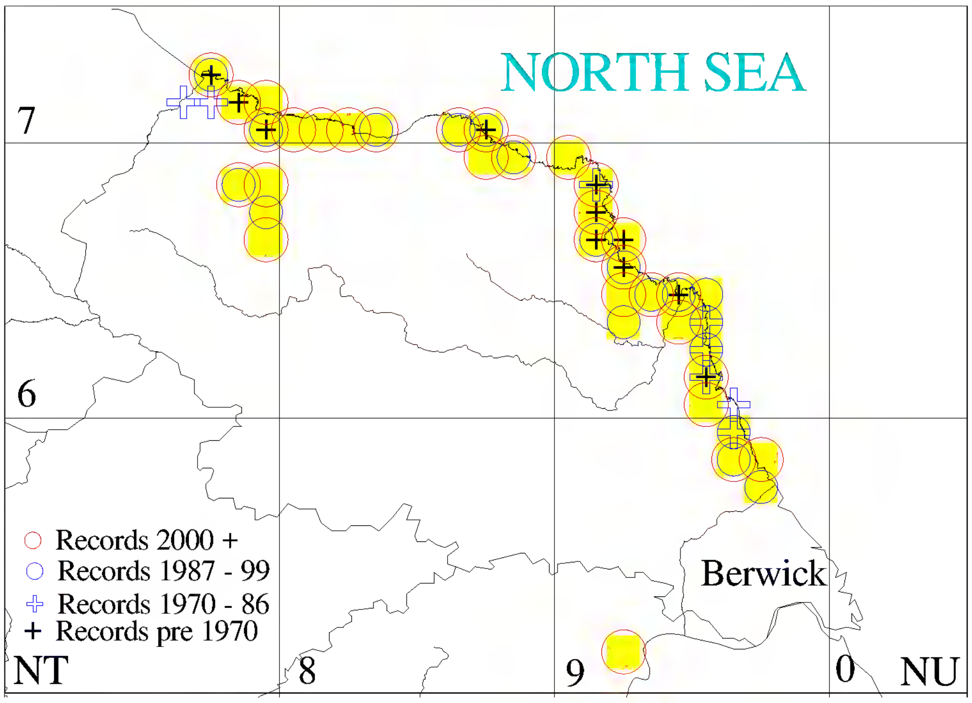
This species was found in Berwickshire in 2006 by a salmon fisherman's wife, Georgina Hargreaves, naturalised by the River Tweed at Tweedmill 84. A further small Berwickshire colony was found in 2013 on a wet retaining wall by the Tweed below Tweedhill 95. At Tweedmill there are great patches of the plant along 150m of a crumbling rock-face that is dripping with water, especially in the gullies where most of the plants are. The whole is more or less shaded by trees. Associates include *Eupatorium cannabinum* Hemp Agrimony, *Cardamine amara* Great Bittercress, *Chrysosplenium oppositifolium* Opposite-leaved Golden-saxifrage and *Impatiens glandulifera* Himalayan Balsam.

The habitat on rocks dripping with water is a far remove from the ruderal habitat at Nottingham. However I have found an image on the web of this *Cochlearia* growing in Almeria, Spain right by a tiny rocky stream in the hills. This wet habitat is not unexpected for a plant that can grow as an annual or short-lived perennial to 1.5-2.0m in a season, on a par with *Impatiens glandulifera*.

Cochlearia officinalis Common Scurvygrass

Coast, native, other axiophyte

Berwickshire 1987-2013	3% monads	5% tetrads	26% hectads
Britain 1987-1999		12% tetrads	37% hectads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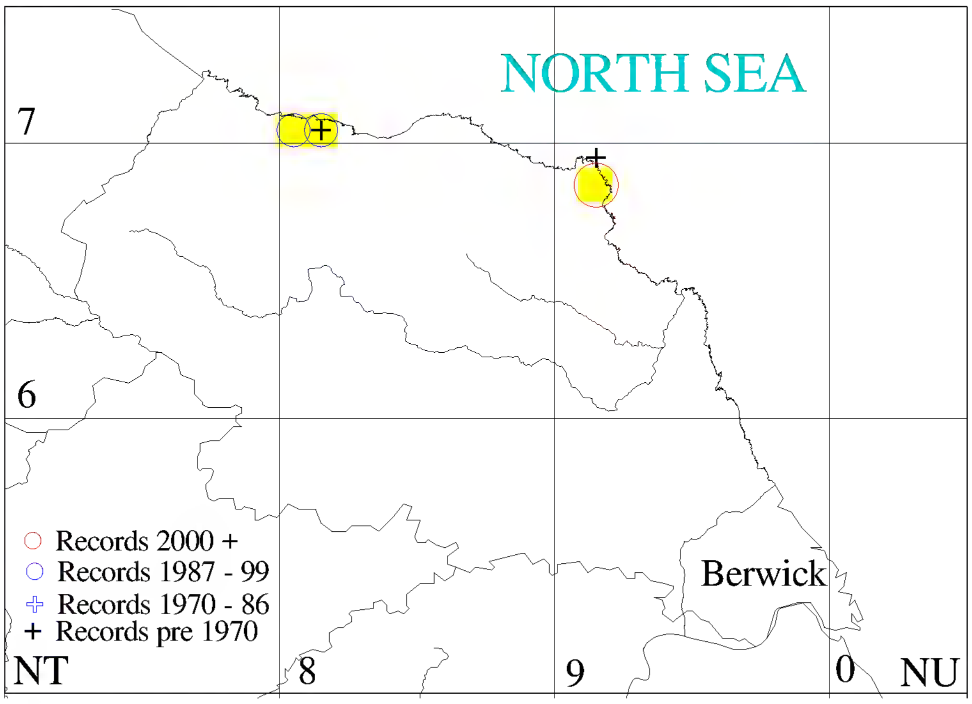
Cochlearia officinalis is found round almost all the coast of Britain and has recently colonised roadsides inland. It is mainly a plant of the back of beaches and of damp gullies in the cliffs behind and is found all along the Berwickshire coast.

It has recently colonised roadsides, though to nothing like the extent of *C. danica* Danish Scurvygrass. It is found well back from the carriageway, unlike *C. danica* which strongly favours the edge of the tarmac. It was first found by the A1 in 1993.

Cochlearia officinalis subsp. scotica Scottish Scurvygrass

Coast, native, rare or scarce, British scarce

Berwickshire 1987-2013	3 sites	0.6% tetrads	9% hectads
Britain 1987-1999		0.2% tetrads	2% hectads


NORTH SEA
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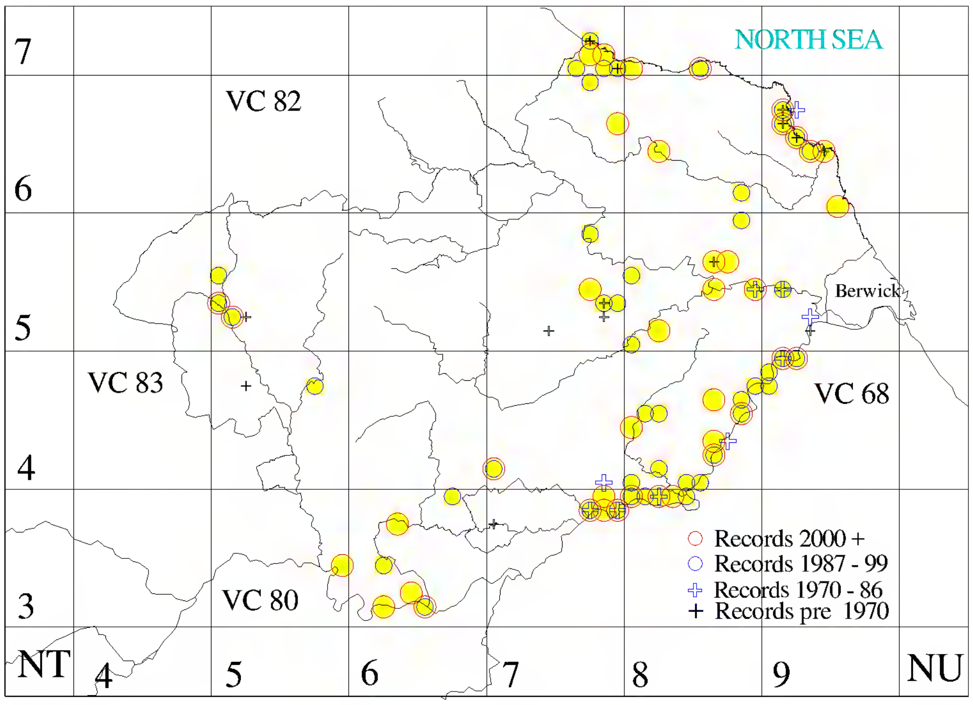
Cochlearia officinalis subsp. scotica is a fairly distinct taxon currently recognised as a subspecies. It is found in coastal habitats mainly in the extreme north of Scotland.

Two small populations have been confirmed in Berwickshire. These are on a cliff at Siccar Point 87 and a beach at St Abbs Head 96 at both of which it grows with *subsp. officinalis*.

Conium maculatum Hemlock

Ruderal, archaeophyte

Berwickshire 1987-2013	6% monads	15% tetrads	74% hectads
Britain 1987-1999		56% tetrads	39% hectads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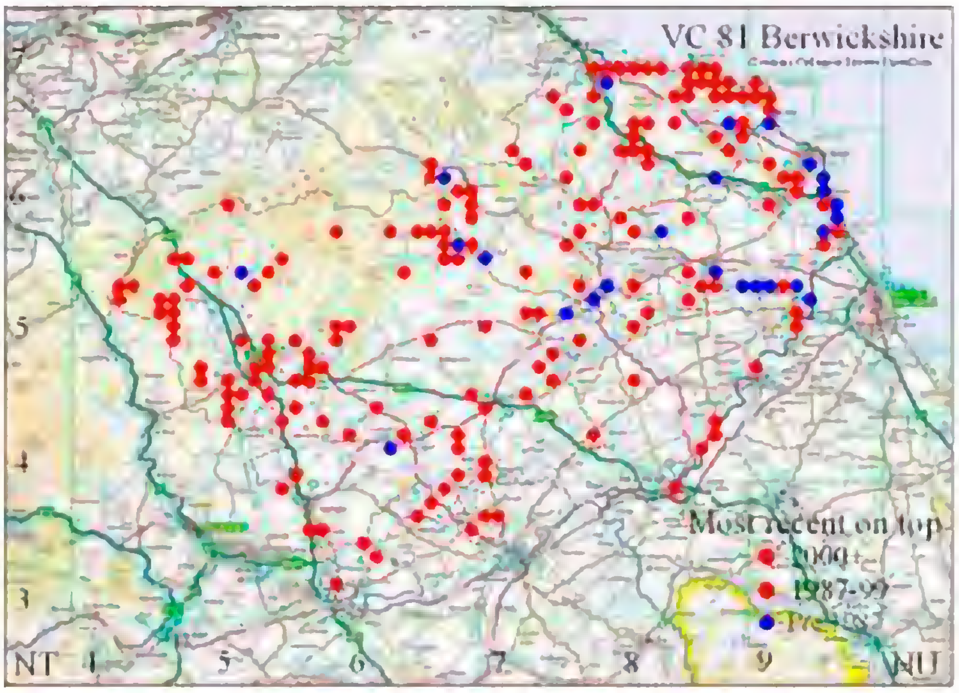
Conium maculatum is very widespread in southern and eastern Britain but scarcer to the north and west. It is a colonist of dry ruderal habitats.

In Berwickshire it is especially frequent on dry banks overlooking the River Tweed and around the coastal towns and villages. Some of the records from more isolated inland localities may relate to deliberate introduction in the past for medicinal use. Elsewhere there are too many possible sources of introduction for such deductions to be entertained.

Conopodium majus Pignut

Grassland, native, other axiophyte

Berwickshire 1987-2013	15% monads	37% tetrads	100% hectads
Britain 1987-1999		65% tetrads	83% hectads


VC 81 Berwickshire
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Most recent on top
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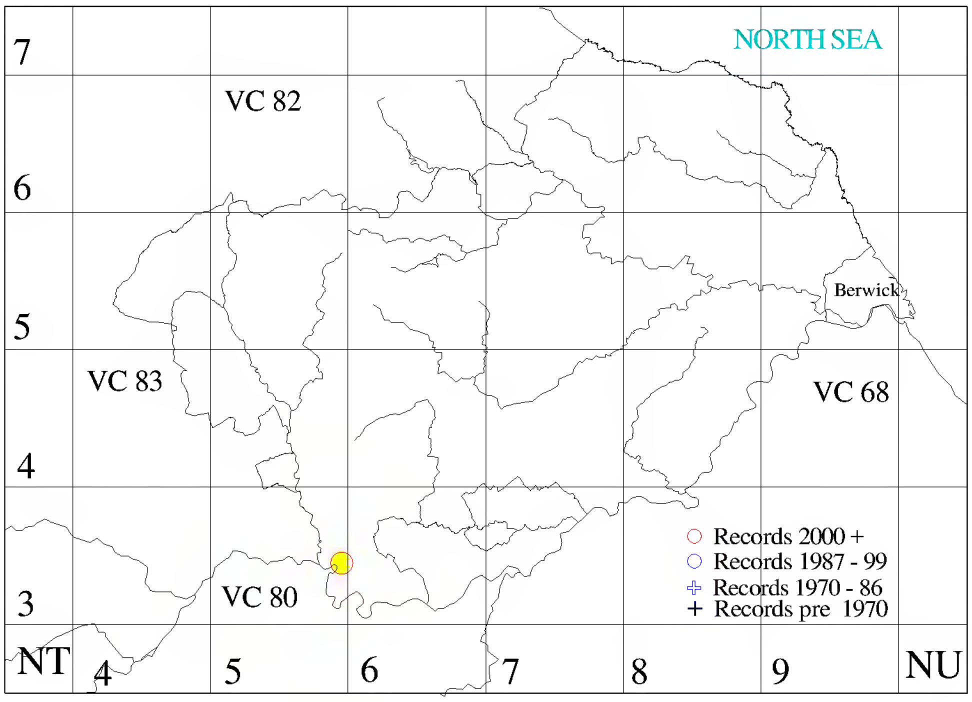
Conopodium majus is typically a woodland-edge plant that is very widespread in Britain. Given the history of woodland losses in Berwickshire it is not surprising that it tends to be associated with steep slopes where oak and birch are or were present but it is equally at home in old pasture on more level ground where there is a faint vegetation link to past woodland cover. Colonies can be extensive and can withstand quite high levels of grazing or flourish under bracken.

This is a resilient species and there is little evidence of recent losses. There has been no suggestion of recent colonisation to new sites.

Convallaria majalis Lily-of-the-valley

Rock, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		3% tetrads	15% hectads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VC 68
Berwick
○ Records 2000 +
○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970
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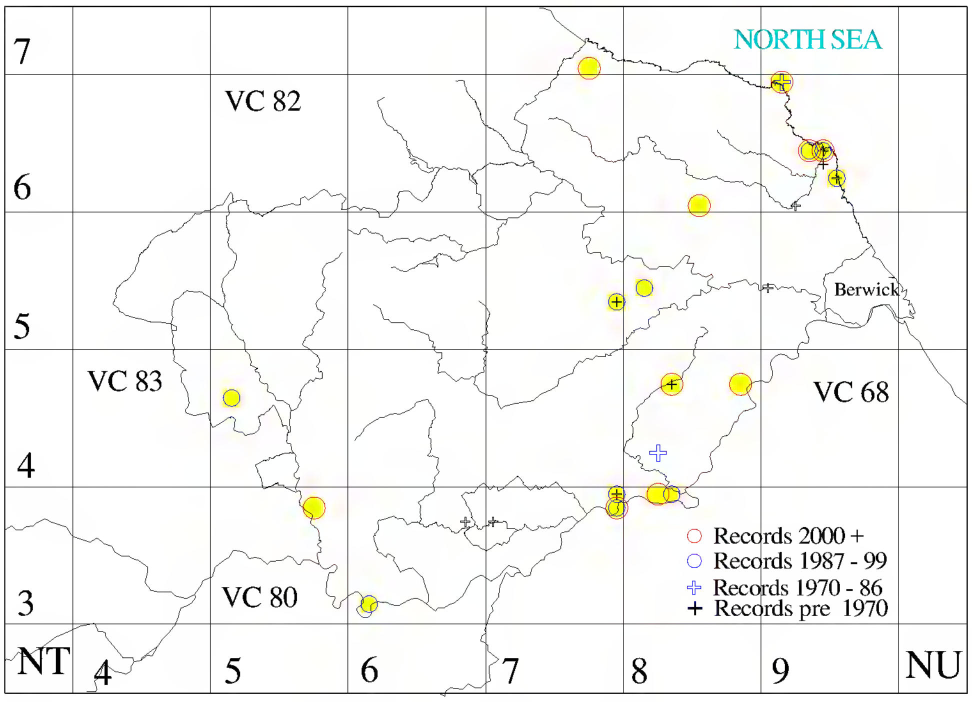
As a native plant *Convallaria majalis* is most characteristic of limestone ash woods in northern Britain but it is found much more widely and it is often unclear whether this much-cultivated plant is or is not a garden escape.

The single Berwickshire colony was only discovered in 2009. It is at Gaitheugh 53 where it was found by Luke Gaskell. It is perched near the top of a geologically remarkable cliff at a bend in the river which has a rich flora including *Sorbus rupicola* Rock Whitebeam and it is likely to be native there.

Convolvulus arvensis Field Bindweed

Ruderal, archaeophyte

Berwickshire 1987-2013	2% monads	4% tetrads	48% hectads
Britain 1987-1999		46% tetrads	56% hectads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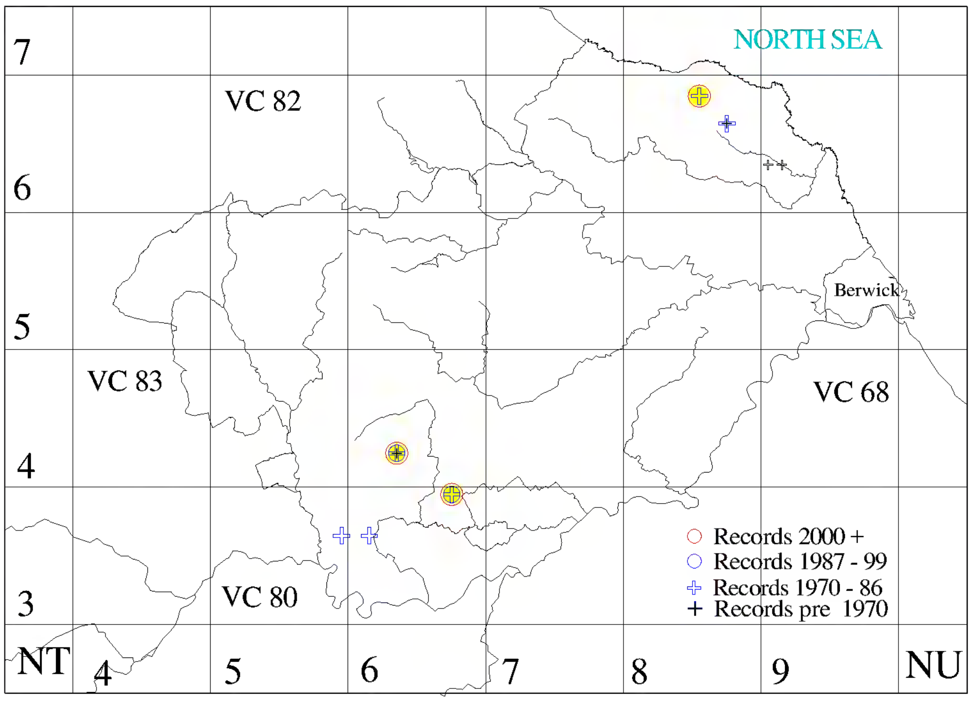
Convolvulus arvensis is native and very widespread in much of England, but is less widespread in Scotland. I believe it to be an archaeophyte in Berwickshire. The species is not found in grassland or arable fields, instead it favours gardens and tradesmen's yards (including hedge banks adjacent) and disused railways. Its distribution in Berwickshire is essentially random: the only slight cluster is in and around the town of Eyemouth 96 where it is found in ruderal situations near the sea as well as in gardens. It was and is more common within the town of Berwick, North Northumberland NT95 where it is particularly associated with the Elizabethan town walls and the quayside. This suggests a typical archaeophyte which is a 'follower of man', being brought in with garden stock and building materials. It seems to have spread in the nineteenth century along railways, perhaps by introduction with the ballast laid on their tracks.

Corallorhiza trifida Coralroot Orchid

Woodland, native, rare or scarce, British scarce

Berwickshire 1987-2013	3½ sites	0.9% tetrads	13% hectads
Britain 1987-1999		0.1% tetrads	2% hectads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+ Records pre 1970
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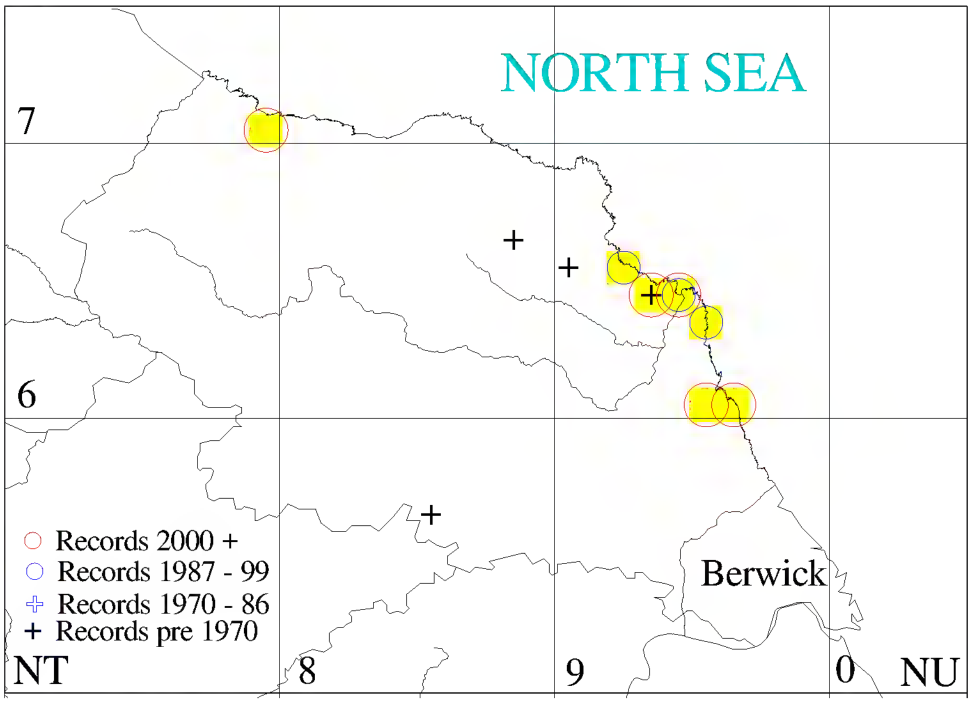
Corallorhiza trifida is an orchid that is very local in eastern Scotland with only a few English populations. It grows in *Sphagnum* in woodland and in dune slacks.

In the 1980's the two main Berwickshire populations at Gordon Moss 64 and Lurgie Loch 63 seemed secure but this is no longer the case. These sites, and others at Redpath Moss 53 and Long Moss 86, are all undergoing habitat change as succession from wetland to woodland continues. The future for this orchid is uncertain. However the populations vary markedly from year to year in the number of flowering plants, so false conclusions can be drawn from a single survey.

Coronopus squamatus (Lepidium coronopus) Swine-cress

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	4½ sites	2% tetrads	9% hectads
Britain 1987-1999		28% tetrads	39% hectads


NORTH SEA
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✢ Records 1970 - 86
+ Records pre 1970
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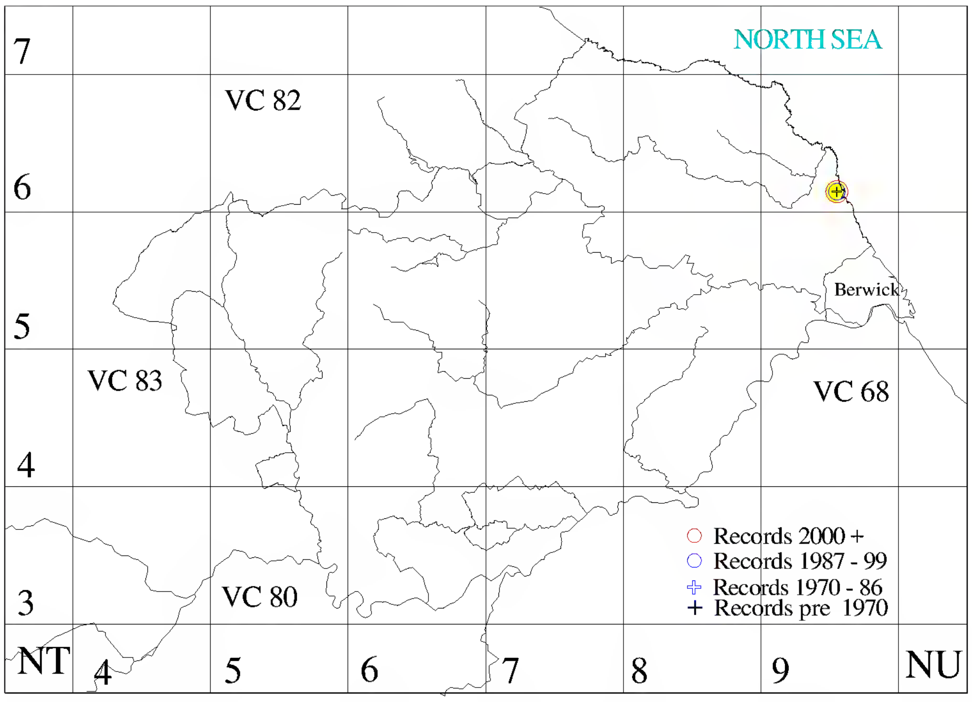
Coronopus squamatus is very widespread in southeast England but scarce elsewhere in Britain. It is a weed of cultivated ground, particularly where it has been trampled.

It is now very localised and rather scarce in Berwickshire and is only at all frequent in and around the town of Eyemouth 96 in field gateways, at pavement edges, on bankings, and in dumped soil; though it has turned up recently by Pease Bay 77 and at Burnmouth 96. It was apparently rather more widespread in the past.

Cotoneaster integrifolius Small-leaved Cotoneaster

Coast, neophyte, intrusive neophyte

Berwickshire 1987-2013	0.1% monads	0.3% tetrads	4% hectads
Britain 1987-1999		2% tetrads	15% hectads


NORTH SEA
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✣ Records 1970 - 86
+ Records pre 1970

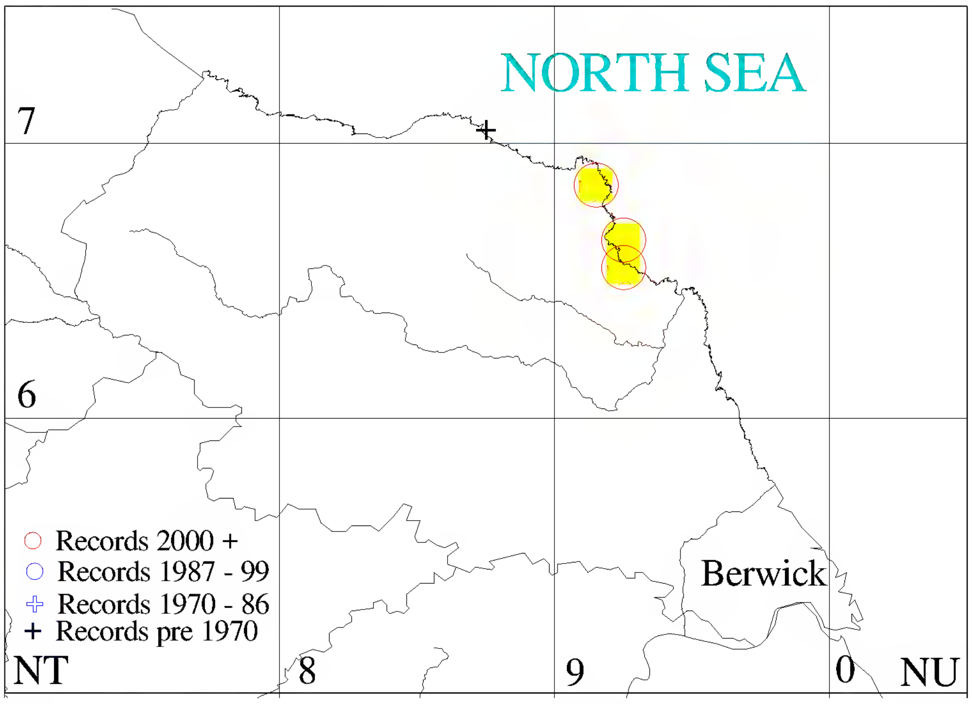
Cotoneaster integrifolius is quite widely naturalised in Britain, especially in the south and west but is only known in the county on the sea braes to the north of Burnmouth 96. There it is a real pest, draping the calcareous rocky slopes in dense foliage that is quite spectacular but very destructive to the rich native flora. It is accompanied at Burnmouth by *C. horizontalis* Wall Cotoneaster and *C. simonsii* Himalayan Cotoneaster, which are somewhat less invasive.

There are only a few sections of the coastal braes which are anything like as calcareous as those at Burnmouth, but they are at risk from seed dispersed by birds. More neutral and acid substrates are seemingly not favoured by this species.

Crambe maritima Sea-kale

Coast, coastal casual, rare or scarce

Berwickshire 1987-2013	2 sites	0.9% tetrads	4% hectads
Britain 1987-1999		1% tetrads	6% hectads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✣ Records 1970 - 86
+ Records pre 1970

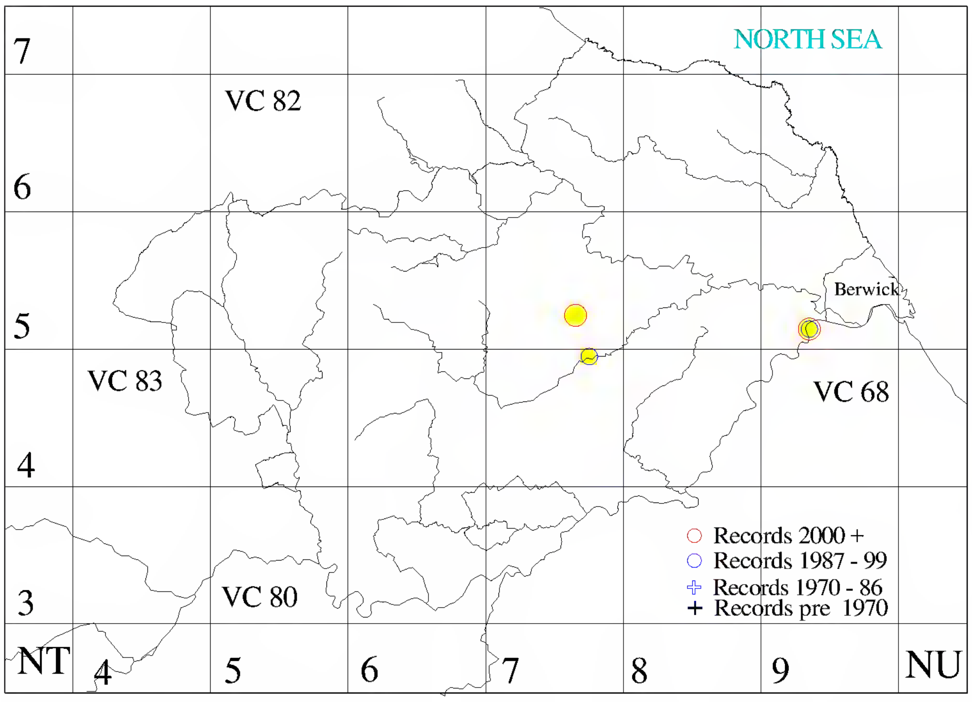
Crambe maritima is a local plant of coastal shingle, mainly in the south and west of England and very scarce on the east coast of Britain.

There were no Berwickshire records between 1836 and 2008. It was formerly plentiful on Lumsdaine Shore 87. Then one plant was unexpectedly found by Clive Dixon on a small sandy beach at Yellow Craig 96 but it was Roger Manning who first saw it when it flowered magnificently the next year. Another plant has now established nearby. It was then found at Burnmouth Harbour on St Abbs Head 96 in 2009, but the record was not submitted until late in 2013 so is not listed in the BSBI Site Register. There are now six plants at St Abbs Head, one of which flowered in 2013.

Crassula helmsii New Zealand Pigmyweed

Aquatic, neophyte, intrusive neophyte

Berwickshire 1987-2013	0.3% monads	0.9% tetrads	13% hectads
Britain 1987-1999		6% tetrads	20% hectads

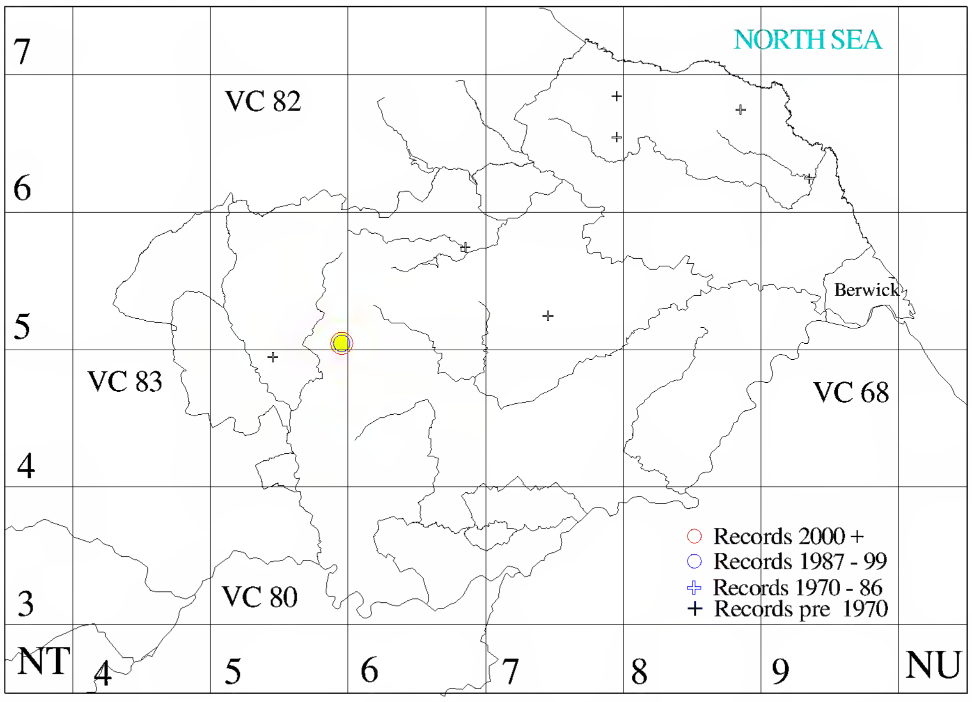


Crassula helmsii is now widespread in England, especially in the southeast, but still scarce elsewhere in Britain. First recorded in the county in 1998, it has so far only been found in three garden ponds where it seems to have been introduced deliberately, or accidentally with other plantings. All these ponds have now been severely invaded and control is proving difficult. It is unclear to what extent this species will invade ponds in the countryside, as it spreads vegetatively and the risk of transportation to new sites by man or wildfowl may be modest. The river systems are on the whole too fast-flowing to offer suitable muddy margins for this species to colonise. *C. helmsii* is much more of a problem further south in Britain.

Crepis mollis Northern Hawk's-beard

Grassland, native, rare or scarce, British rare

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.04% tetrads	0.5% hectads



Crepis mollis is a short-lived perennial of herb-rich grassland or wood-pasture on shallow, slightly flushed, base-rich soils. Northumberland and Durham hold much of the British population.

It has apparently been lost from all but one of its former sites in Berwickshire. The necessary lightly-grazed woodland glade habitat on base-rich soils has been almost eliminated in the county.

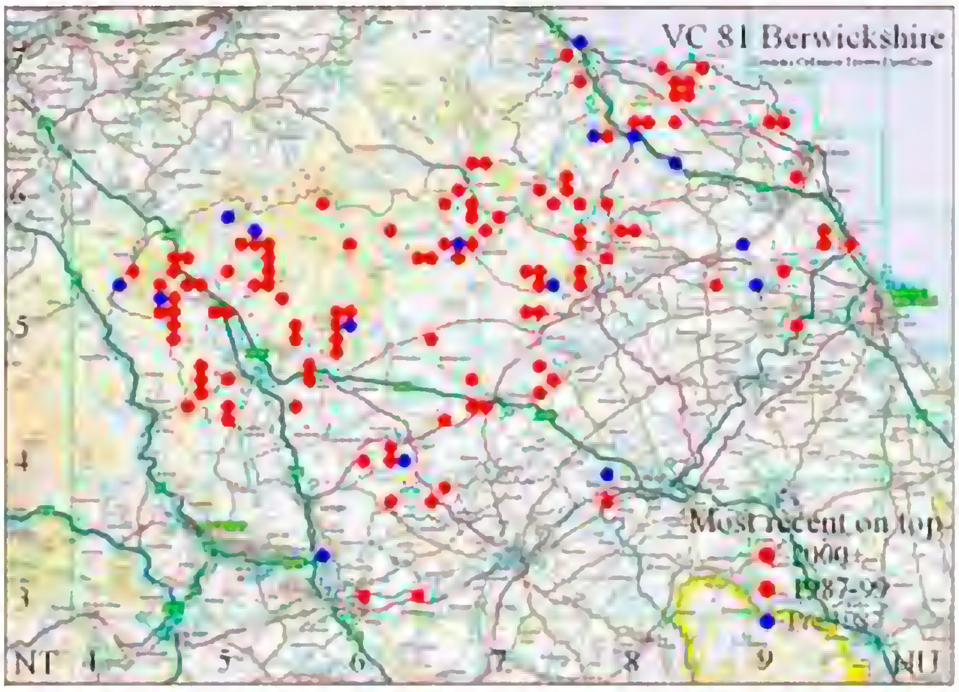
The remaining site at Cromwells 55 is a delightful small field corner with rocky knowes and a wooded burnside that supports a rich flora including *Helianthemum nummularium* Rockrose. *Crepis mollis* has been recorded there in eight 10x10m cells.

I have cultivated it in our garden at Clarilaw, Roxbughshire NT51 for many years. It was planted in partial shade in a paddock, where it soon died out, and under blackcurrant bushes, where it has survived and flowered well. It has self-sown into our lawn, where apple trees give some shade to seven plants that receive respect from the lawnmower, and at the edge of an arch through a hedge. Seed set is often poor.

Crepis paludosa Marsh Hawk's-beard

Wetland, native, other axiophyte

Berwickshire 1987-2013	10% monads	24% tetrads	83% hectads
Britain 1987-1999		22% tetrads	34% hectads


VC 81 Berwickshire
Most recent on top
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Pre-1987
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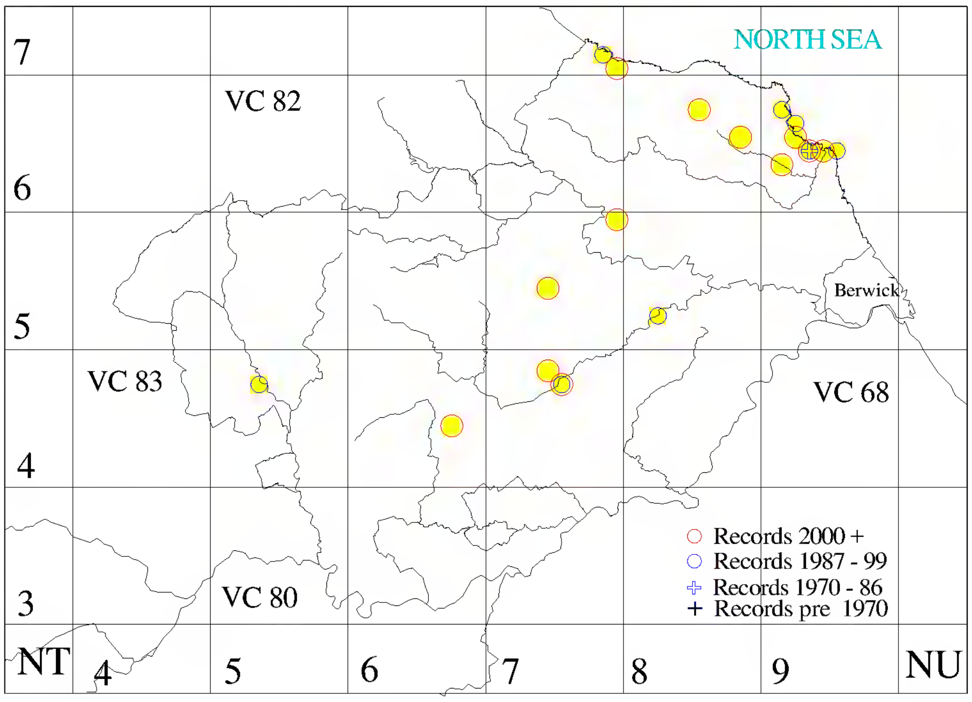
Crepis paludosa is a very widespread plant in the northern half of Britain but is absent from the south. In Berwickshire it grows by waterfalls and in rocky gorges and more widely in watery base-rich flushes where the vegetation cover is incomplete, especially at the point at which a spring line reaches the surface. The few records from Tweedside are special cases where a dripping rock-face or retaining wall has been colonised as the habitat mimics the gorge habitat of this species.

No significant trends are evident from the map. In its burnside habitat *C. paludosa* is probably mobile with plants displaced by floods being replaced nearby, but with no change in the 1km distribution as at that scale no suitable vacant habitat has recently become available for colonisation.

Crocosmia x crocosmiiflora = C. aurea x potsii Montbretia

Coast, neophyte, intrusive neophyte

Berwickshire 1987-2013	2% monads	4% tetrads	35% hectads
Britain 1987-1999		21% tetrads	44% hectads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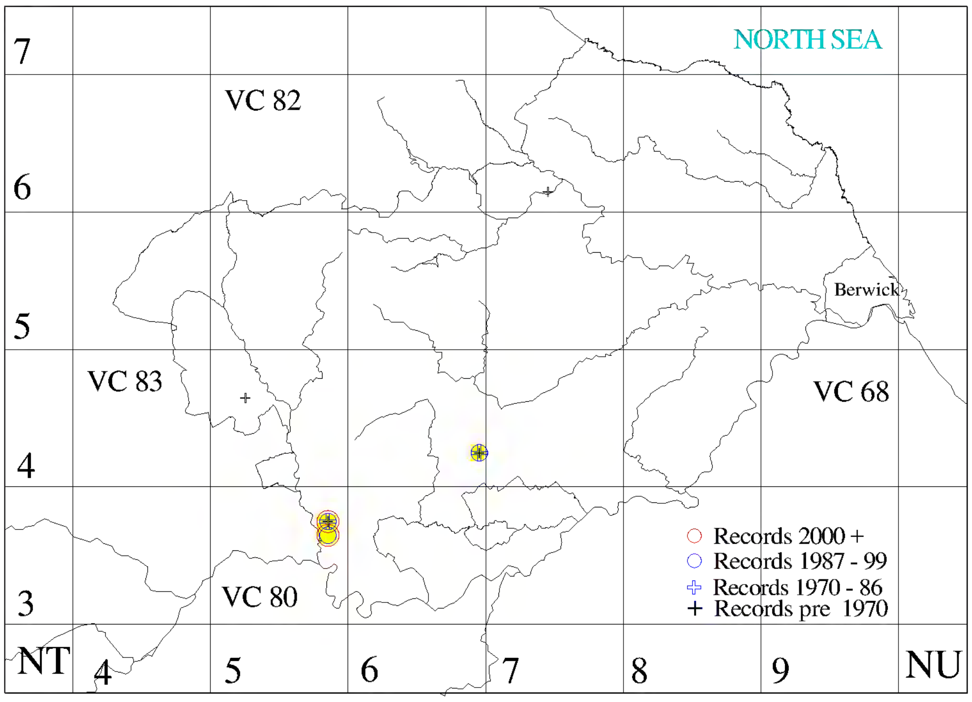
VC 83
VC 80
VC 68
Berwick
○ Records 2000 +
○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

'Montbretia' is widely naturalised in Britain, but with a strong western tendency. It is quite frequent as a garden outcast in Berwickshire but it does not spread to anything like the extent that it does on the west coast of Scotland. It is only on the sea braes that 'Montbretia' becomes intrusive. Around Eyemouth 96, in particular, there are some large colonies spoiling what are otherwise undisturbed communities of native plants.

Cryptogramma crispa Parsley Fern

Rock, native, rare or scarce

Berwickshire 1987-2013	1 site	0.6% tetrads	9% hectads
Britain 1987-1999		3% tetrads	10% hectads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VC 80
VC 68
Berwick
○ Records 2000 +
○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970

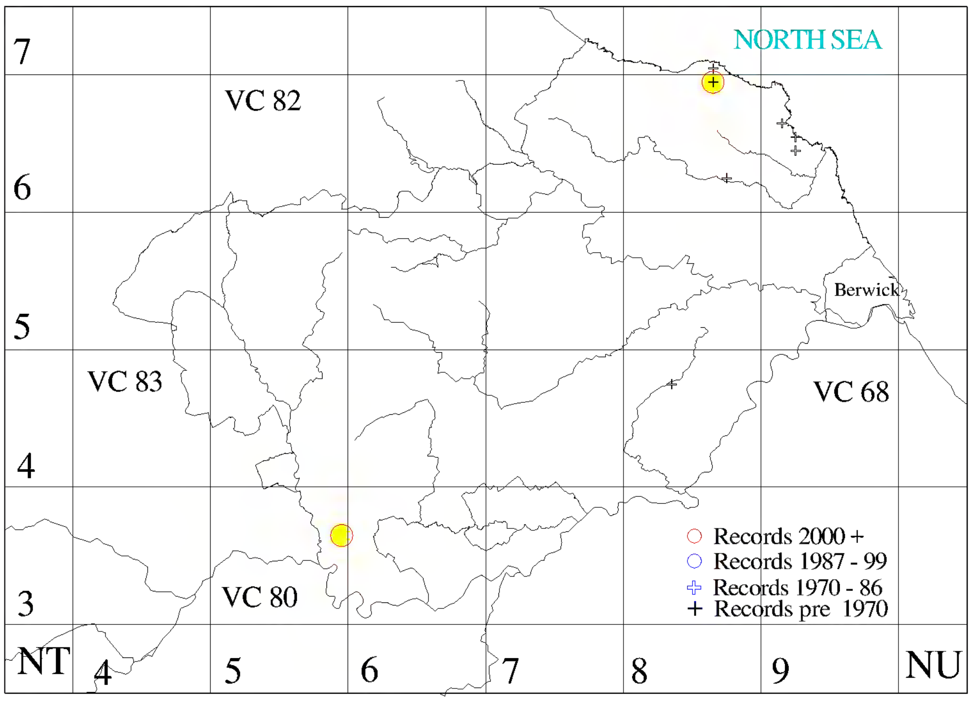
Cryptogramma crispa is quite widespread on acid rocks and screes on the hills of north-west Britain.

It is now only known in Berwickshire at the Black Hill 53, where it is rather plentiful on the screes. The losses from Chester Hill 54 and Mountjoy Wood 76 are surprising as apparently suitable screes remain there. There was also a small but unusual colony on an old stone dyke near The Bield 64. Sadly, it was destroyed recently during forestry operations.

Cynoglossum officinale Hound's-tongue

Coast, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		3% tetrads	14% hectads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○ Records 1987 - 99
✛ Records 1970 - 86
+ Records pre 1970

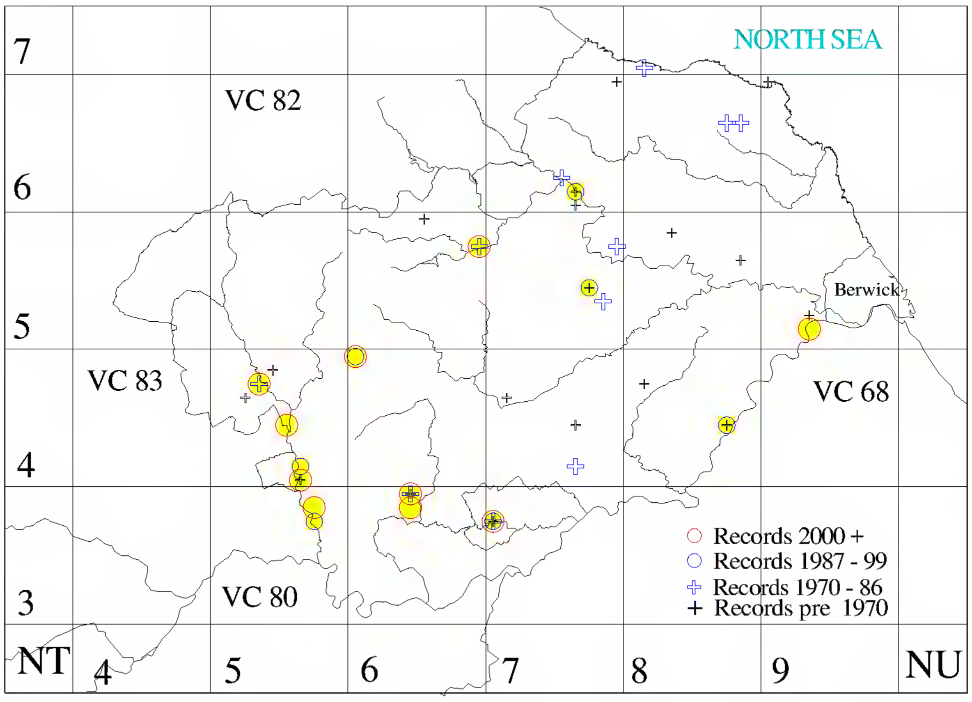
Cynoglossum officinale is a rather local plant of dry grassland, often found near the coast. It is most frequent in southeast Britain.

Only two Berwickshire colonies are known, though it was formerly a little more widespread. The *Cynoglossum* grows in an old quarry at Redpath 53 and on the rocky banks of Lumsdaine Dean 86, which is one of its historical localities. Both colonies are small.

Cystopteris fragilis Brittle Bladder-fern

Rock, native, selected axiophyte

Berwickshire 1987-2013	1% monads	3% tetrads	43% hectads
Britain 1987-1999		11% tetrads	26% hectads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+ Records 1970 - 86
+ Records pre 1970

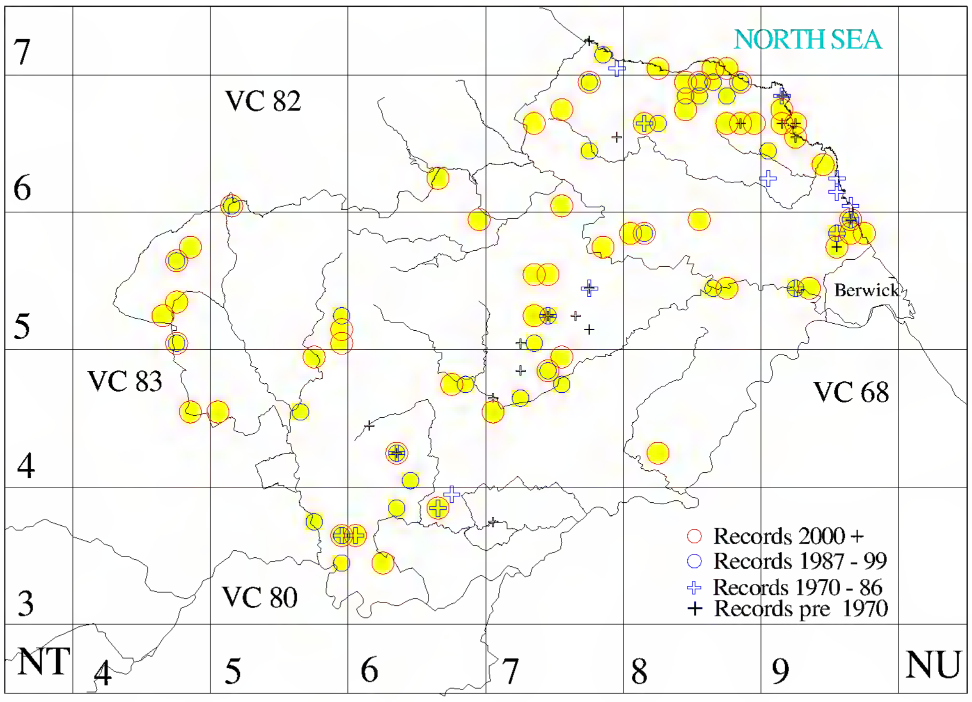
Cystopteris fragilis is a fairly widespread hill plant in Britain found on wet base-rich rocks in shade. It is also found more widely as an uncommon plant of walls. It is rather scarce in Berwickshire, native only on a few cliffs near the Leader Water 53, 54 and, rather plentifully, on rocks below Stichill Linn 73 on the Eden Water. Further east all the records are from walls, many of them garden walls.

Despite the potential for colonisation, none of the populations appear to be recently established. Some of the populations on walls have been lost relatively recently to re-pointing and to development, but others have not been revisited.

Dactylorhiza fuchsii Common Spotted-orchid

Grassland, native, other axiophyte

Berwickshire 1987-2013	7% monads	18% tetrads	87% hectads
Britain 1987-1999		33% tetrads	67% hectads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○ Records 1987 - 99
+ Records 1970 - 86
+ Records pre 1970

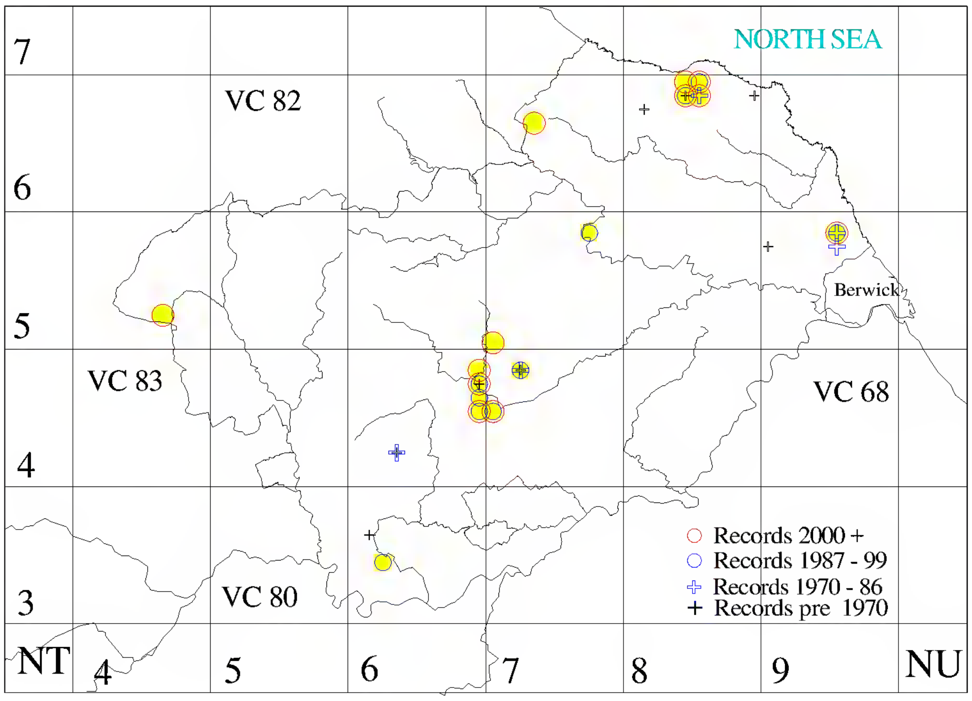
Dactylorhiza fuchsii is one of the most widespread British orchids and can be locally abundant. Although it is widely distributed in Berwickshire in a range of habitats it is far from being frequent and is seldom present in large quantity. There is a good colony on the coast in Fleurs Dean 96. It is most often found in slightly wet ground near burns or in quite tall grassland on steep braes where it can be elusive. It also sometimes colonises more ruderal habitats as at Park quarry near Redpath Moss 53. Most records have been made in the last week of June or the first three weeks of July, later than many grassland species. The hybrid with *D. maculata* is known from 3 monads.

There is a rather poor match between sites where this orchid was found in 1987-99 and those where it has been found in 2000-13. This partly represents the difficulty in recording a species best identified when in flower but a cycle of losses and colonisation appears to be a factor. Nevertheless there seem to be a good many long-established colonies.

Dactylorhiza incarnata Early Marsh-orchid

Wetland, native, rare or scarce

Berwickshire 1987-2013	6 sites	3% tetrads	35% hectads
Britain 1987-1999		6% tetrads	24% hectads



Dactylorhiza incarnata is widespread in Britain but rather local. It is an orchid of base-rich flushes.

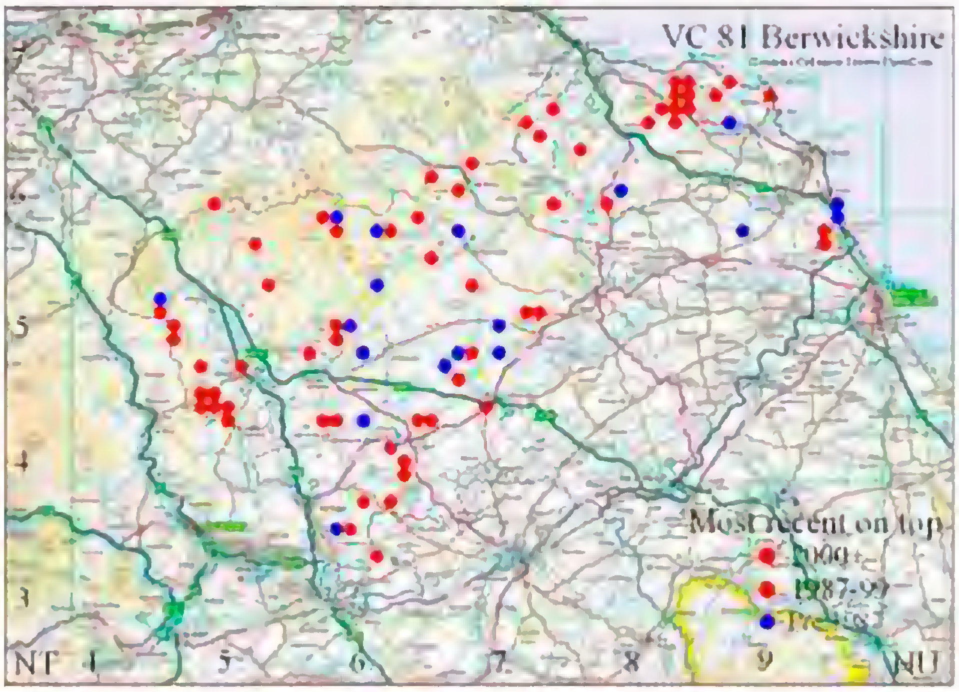
There are two colour forms in Berwickshire. Flesh-flowered plants are the most frequent and correspond with *subsp. incarnata.* Plants with much deeper-coloured flowers corresponding with *subsp. pulchella* are sometimes found with them but have never been observed as a discrete population. The Berwickshire evidence is thus unhelpful to the case for treating the colour forms as subspecies. The hybrid with *D. maculata* is known from one monad.

Many sites in Berwickshire have been lost to drainage and most others are vulnerable. The best populations are those in Greenlaw Dean 64, continuing by the Fangrist Burn 64, 75, those in various flushes near Dowlaw Moss and Lumsdaine Dean 86 and on Lamberton Moor 95. All these have both colour forms. Other sites are near Threeburnford 45 and by the Dye Water below Little Dod 76. These have flesh-coloured flowers only.

Dactylorhiza maculata Heath Spotted-orchid

Moorland, native, other axiophyte

Berwickshire 1987-2013	5% monads	14% tetrads	65% hectads
Britain 1987-1999		25% tetrads	56% hectads



Dactylorhiza maculata is the most widespread moorland orchid and is often abundant in the west of Scotland. In Berwickshire it occurs throughout the moorlands but is usually highly localised and in small quantity. The long-established regime of muirburn is thought to have very much reduced the habitat for this species. It thrives in shallow peat and that habitat has been destroyed over most of the Lammermuirs. This interpretation is supported by the concentration of records on moorland that is little burnt such as Lauder Common 45 and Coldingham Common 86.

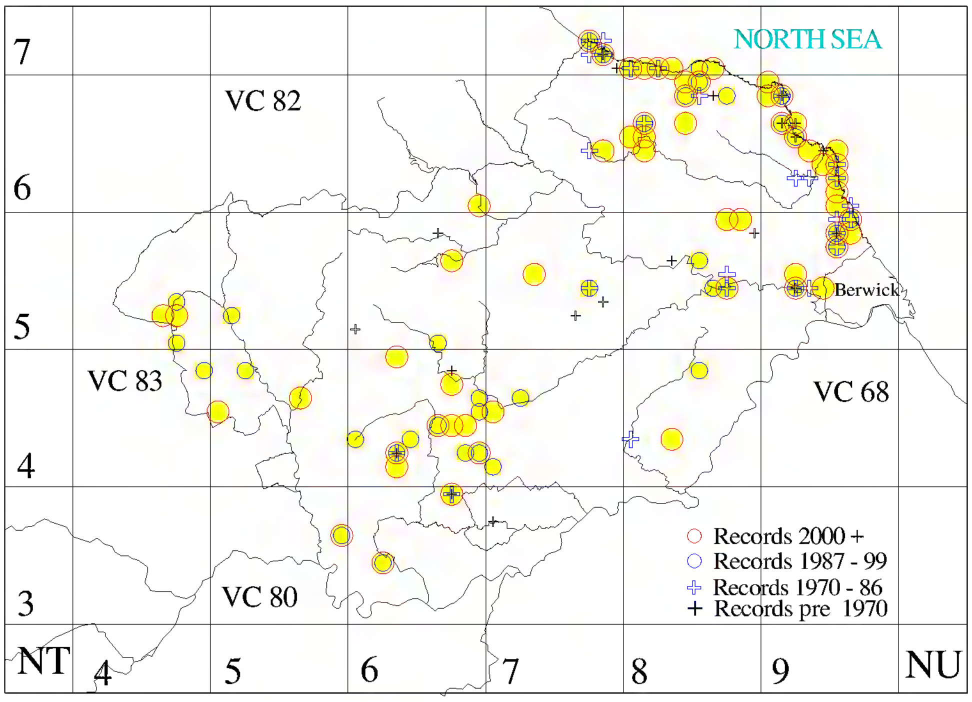
In common with other orchids *D. maculata* is mobile and is capable of re-establishing after muirburn especially if there is some *Sphagnum* re-growth.

It has sometimes colonised ditches in recently-established forestry. The historical record is not adequate to evidence the likely long-term decline of this species.

Dactylorhiza purpurella Northern Marsh-orchid

Wetland, native, other axiophyte

Berwickshire 1987-2013	7% monads	17% tetrads	83% hectads
Britain 1987-1999		12% tetrads	33% hectads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Dactylorhiza purpurella is widespread in northern Britain, but it is not a hill plant. This orchid is plentiful on the coast where it exploits unstable wet slopes, colonising freely after landslips. Similar habitat occurs very locally on braes by the lower Whiteadder Water. It also occurs in shallow fens, especially in the Gordon area 64 where it is occasionally plentiful, but is less widespread than might be expected. Man-made habitats are often colonised, such as quarry floors and re-engineered road bankings. These colonies are often short-lived.

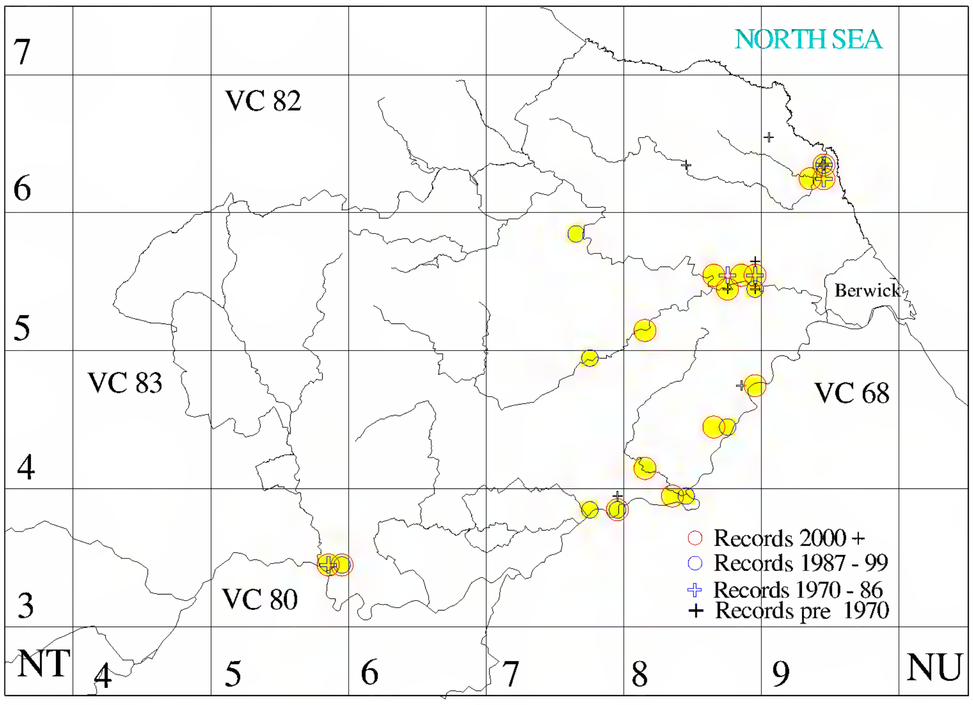
Hybrids have been observed between this species and *D. fuchsii* Common Spotted-orchid (7 monads), *D. incarnata* Early Marsh-orchid (2 monads) and *D maculata* Heath Spotted-orchid (6 monads).

Given the mobility of this species and the unevenness of the surveys it is unsafe to attempt to assess overall change.

Daphne laureola Spurge-laurel

Woodland, neophyte, prominent neophyte

Berwickshire 1987-2013	2% monads	4% tetrads	35% hectads
Britain 1987-1999		27% tetrads	6% hectads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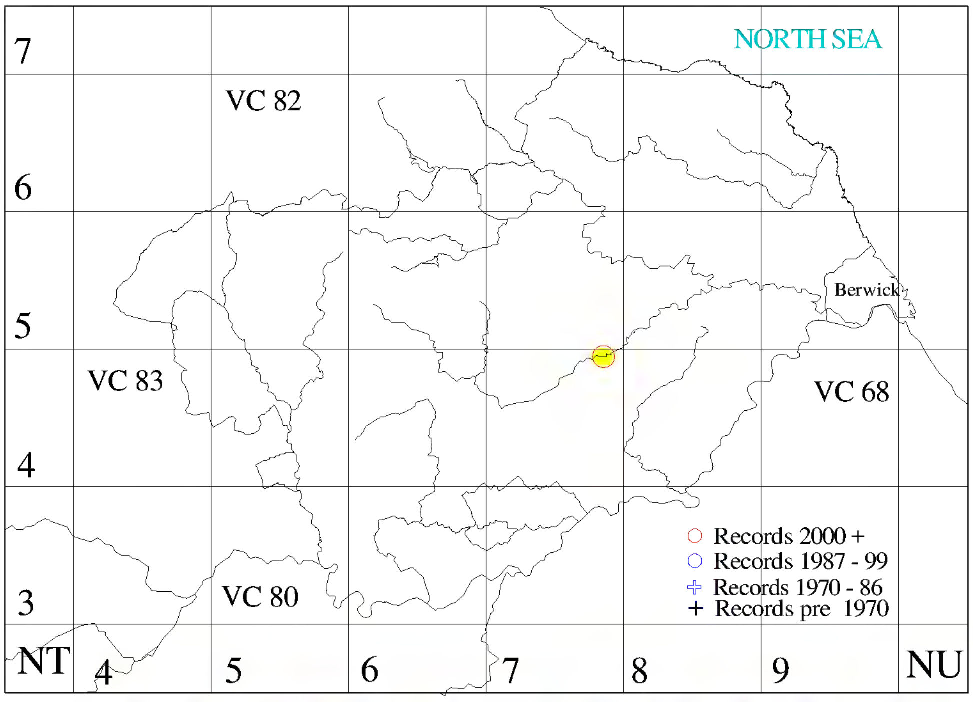
Daphne laureola is quite widespread in southeast Britain but much scarcer elsewhere. It is thought to be a native woodland plant in some southern counties but elsewhere it is a naturalised garden escape.

In Berwickshire it is a well naturalised garden escape. Some of the records are from the policies of mansion houses or in nearby woodland but this species has naturalised more widely along the lower Whiteadder Water where it is quite a feature of steep wooded banks overlooking the river, usually in south-facing positions.

Darmera peltata Indian-rhubarb

Aquatic, neophyte

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	2% hectads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Darmera peltata occurs in a few places across Britain as a garden escape in damp ground.

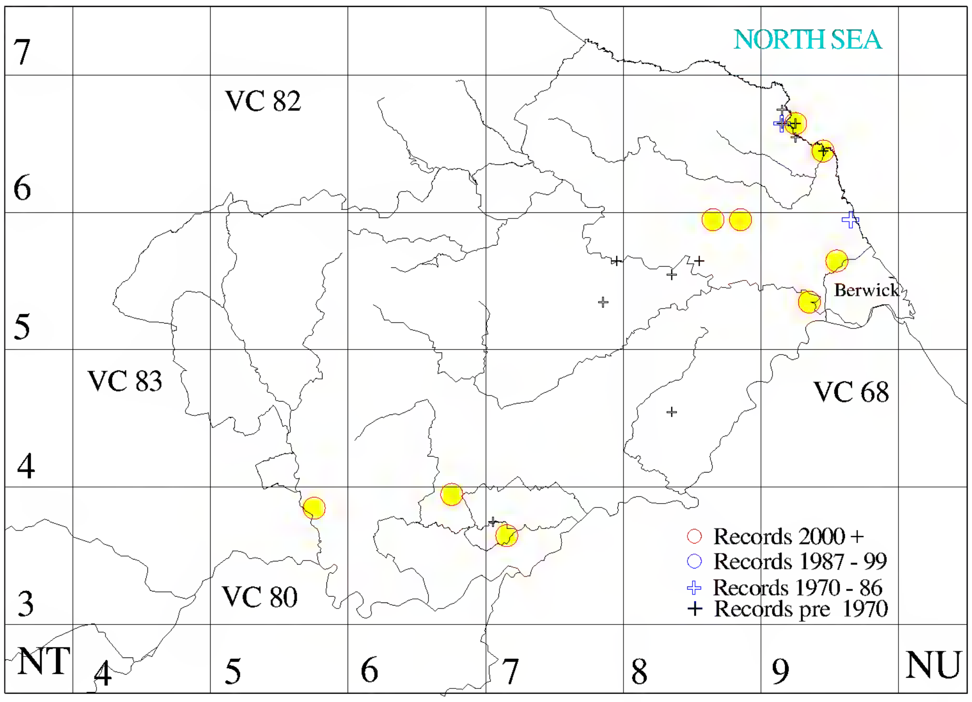
The one Berwickshire colony is a rather remarkable sight, as it grows as an emergent aquatic on the bed of the Blackadder Water above Cairns Mill 74 where there are three patches over an area of 5x2m. The rhubarb-like leaves stand high above the water.

***Darmera peltata* Blackadder Water above Cairns Mill 2013**

Daucus carota subsp. carota Wild Carrot

Grassland, native, rare or scarce

Berwickshire 1987-2013	1+5½ sites	2% tetrads	26% hectads
Britain 1987-1999		28% tetrads	55% hectads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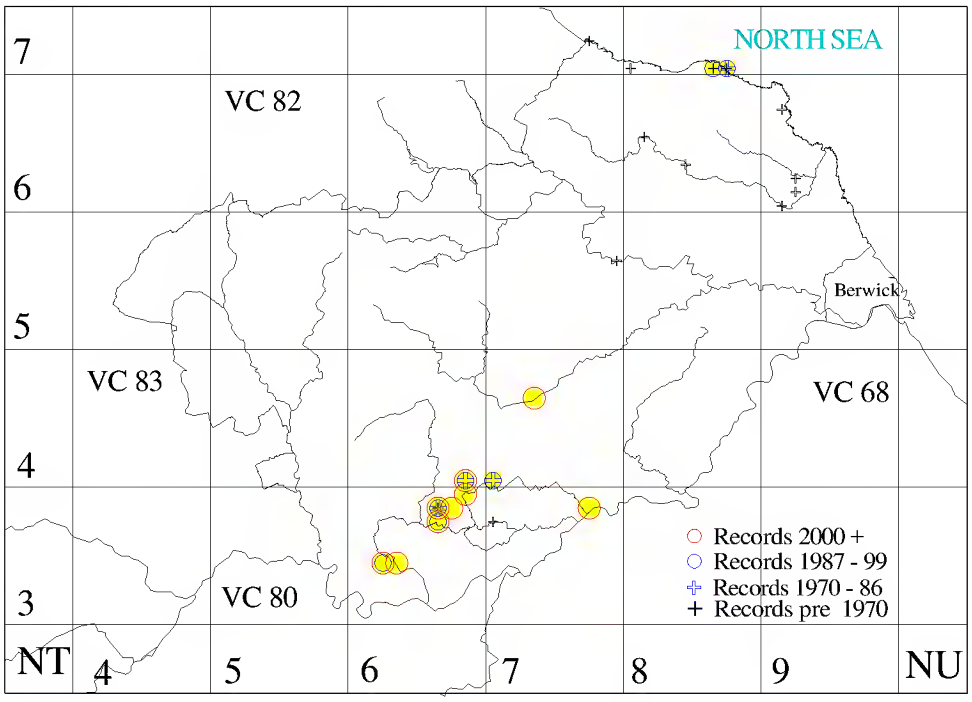
Daucus carota subsp. carota is widespread in calcareous grassland in southern Britain and by sandy coasts in the west of Scotland but very scarce elsewhere.

The only extant native population in Berwickshire appears to be the few plants in sandy grassland at the foot of a cliff just south of St Abbs village 96. Recently this species has been included in wildflower mixes sown in public places, in setaside and in a few places where it might establish. Small naturalised populations have formed at Causewaybank gravel pit 85 and on a bank by the new harbour at Gunsgreen 96. The catastrophic fate of this once frequent Berwickshire species appears to owe more to eutrophication than to any other factor.

Dianthus deltoides Maiden Pink

Grassland, native, rare or scarce, British scarce

Berwickshire 1987-2013	9¾ sites	2% tetrads	22% hectads
Britain 1987-1999		0.9% tetrads	4% hectads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Dianthus deltoides is a highly attractive tufted perennial of sandy grassland and base-rich rocky outcrops. The Scottish Borders and Northumberland comprise a major stronghold of this species which has a widely scattered distribution in Britain with isolated groups of sites.

The remaining Berwickshire sites are almost all on the basaltic lavas of the Kelso traps. Much the best is at Hareheugh Craigs 64, but there are still quite numerous clusters of plants in several fields around Girrick 63, at Muckle Thairn 63 and at Butchercote Craigs 63. Small colonies occur on a knowe by the Blackadder and in an old railway cutting neat Lintmill Bridge 74 and on a sandy bank by the Tweed near Lochton 73.

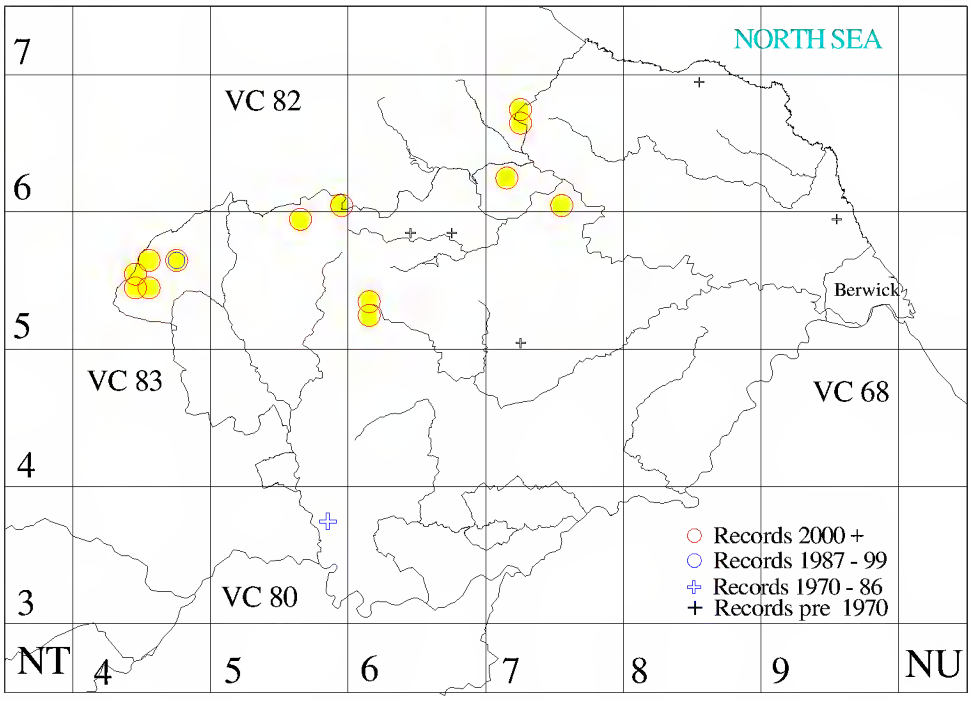
The Hareheugh Craigs colony was surveyed in detail on 22 July 2000 and 28 June 2007. In 2000 an attempt was made to count the colony by individual clumps, 828 clumps were found, 510 on the southernmost craig 687399, 8 on the middle craig 688399, 84 on the easternmost craig 689399, 6 at the 'tail' of the craigs 688401 and 220 on the craig with the hill fort 687400. Four clumps had white flowers. Detailed GRs were also taken. By the time of the repeat survey it had been decided that the count by clumps was too subjective to be repeatable, as the clumps were not sufficiently distinct from one another. Instead the survey was by 10x10m grid cells. The 2007 count was as follows (with the 2000 figures in brackets): southernmost craig 27 (19), middle craig 8 (1), easternmost craig 7 (5), 'tail' 2 (6), craig with the fort 14 (16), total 58 (43). In 2007 39 of the 58 cells had many plants and 19 a few only (in 2000 28 of the 43 cells has many plants and 15 a few only). Between the two surveys the land had been entered into a grant-aided stewardship scheme. Under the prescriptive rules of the scheme the land had been grazed in the winter and rested from grazing in the summer. This had favoured the *Dianthus* on the southernmost and middle craigs where it had colonised tallus slopes below the craigs, but had reduced the *Dianthus* on the 'tail' where it had been crowded out by the spread of coarse grasses.

Hareheugh Craigs: scree slope below cliffs with *Dianthus deltoides*

Diphasiastrum alpinum Alpine Clubmoss

Moorland, native, rare or scarce

Berwickshire 1987-2013	7 sites	2% tetrads	22% hectads
Britain 1987-1999		6% tetrads	13% hectads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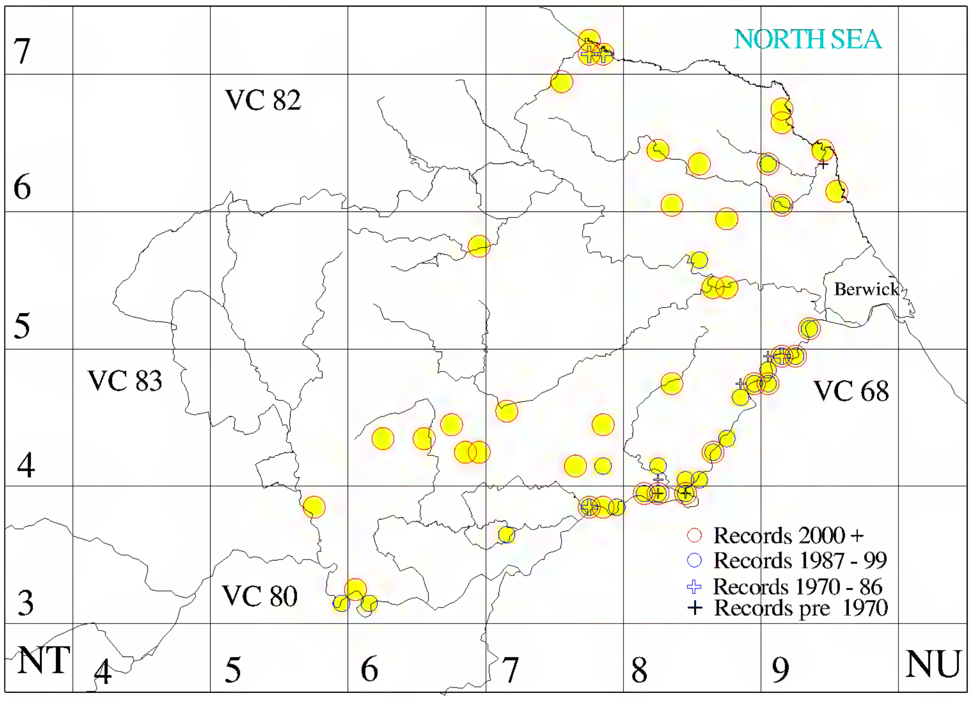
Diphasiastrum alpinum is a montane species of open habitats that is widespread in the hills of northern Scotland but localised on the highest ground elsewhere.

In Berwickshire it was quite widespread on the Lammermuirs in the nineteenth century but seemed to have been more or less reduced to a casual by 2000, probably by a combination of sheep disturbance and muirburn. Since 2007 it has been found to have colonised recently constructed forestry tracks where it favours the stony track-sides, burrowing under the stones with its creeping stems. The main colonies in forestry are at Hartside Hill 45, Harecleugh Forest 65 and Dunglass Common 76. A few plants have also been found by the access roads across the Lammermuirs away from the forestry. A colony discovered in 1990 by the A7 at Red Brae 55 and still there in 2004 could not be refound in 2013, as there had been vegetation succession on the stony bank that had been a product of road realignment in the 1980's. Similar vegetation succession may overtake the colonies on forestry roads.

Dipsacus fullonum Wild Teasel

Grassland, neophyte, prominent neophyte

Berwickshire 1987-2013	4% monads	12% tetrads	65% hectads
Britain 1987-1999		37% tetrads	54% hectads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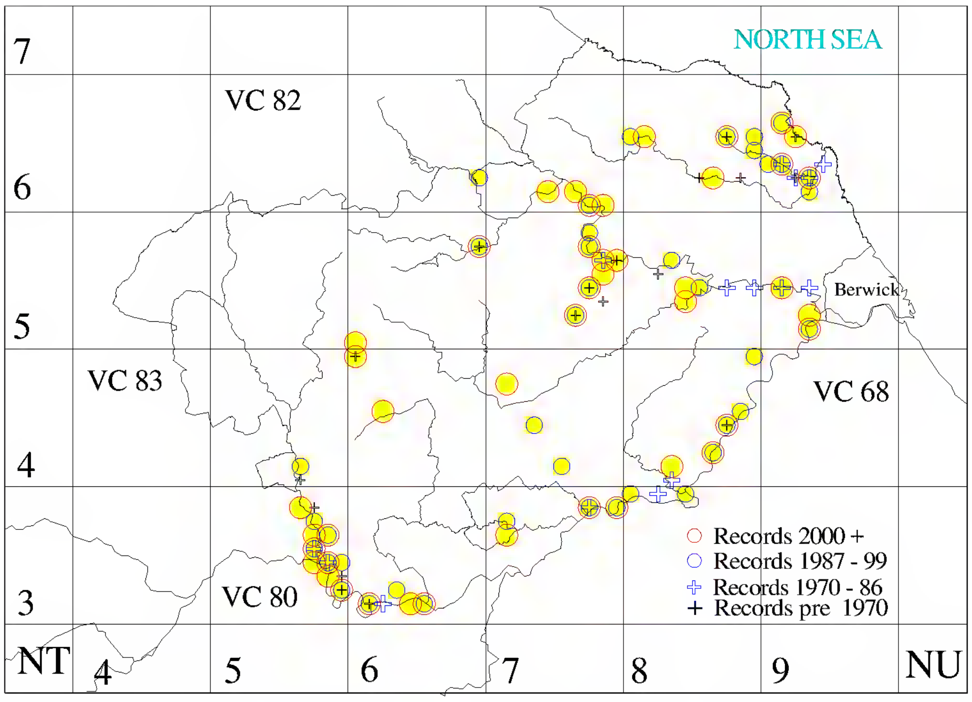
Dipsacus fullonum is a very widespread plant in southern and eastern England where it colonises a wide variety of habitats. It was first recorded in Berwickshire in 1831, but only as a narrowly naturalised garden escape and it was not until 1893 that it was recorded by the Tweed. Scaurs above the Tweed remain its principal habitat today where there are some large colonies in open sun-baked habitat. More recently it has been found in a variety of habitats. Some plants are clearly escapes from cultivation in gardens but others are in grassland or in woodland where there is a probable association with forestry operations.

Doronicum pardalianches Leopard's-bane

Woodland, neophyte, intrusive neophyte

Berwickshire 1987-2013	5% monads	15% tetrads	70% hectads
Britain 1987-1999		4% tetrads	21% hectads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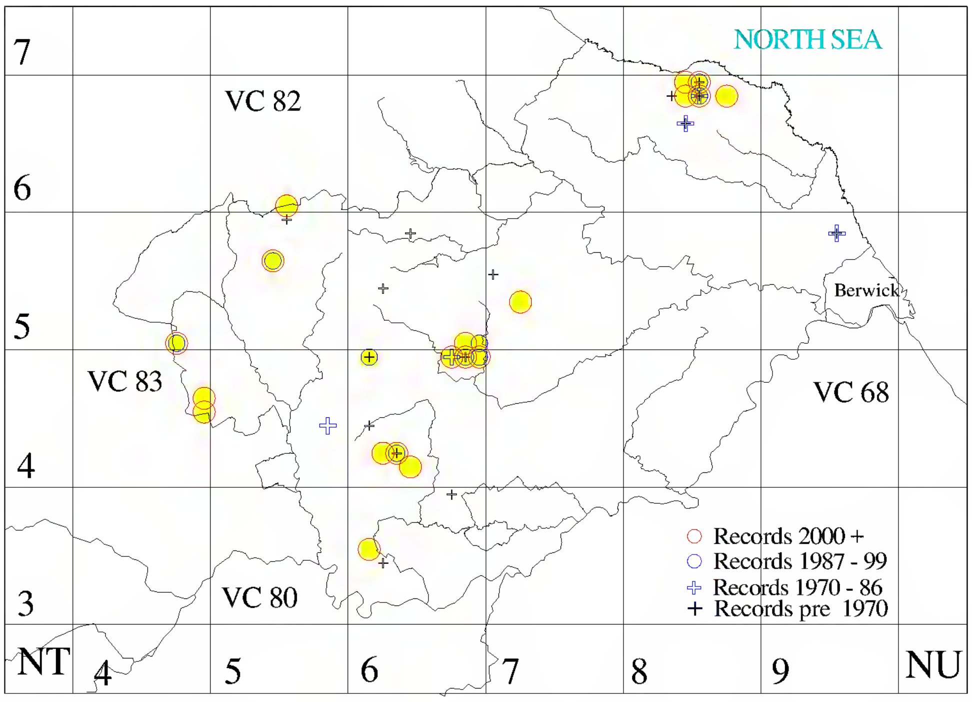
I wonder if the attempts to avoid promoting herbaceous garden plants that are unduly invasive have been more effective than one might suppose. Certainly many of the incomers found dumped along road verges are clump-forming species. The most invasive is *Doronicum pardalianches* which is also found in woodland where it can form huge patches, but I have seen no evidence of it spreading by seed. *D. pardalianches* is widely naturalised in Britain, but is especially characteristic of woodland in eastern Scotland.

While it has been deliberately introduced in some places in Berwickshire, much of the recent colonisation has been by root fragments carried down watercourses.

Drosera rotundifolia Round-leaved Sundew

Moorland, native, rare or scarce

Berwickshire 1987-2013	17 sites	4% tetrads	39% hectads
Britain 1987-1999		30% tetrads	48% hectads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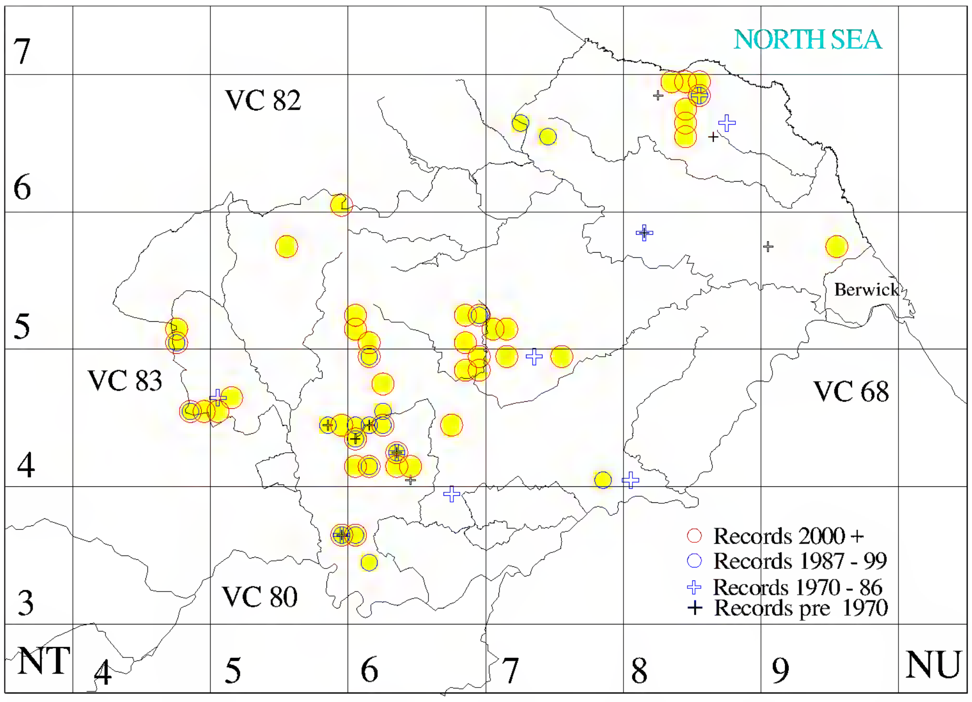
Drosera rotundifolia is very widespread in western Scotland, north-west England and Wales but scarce in the east and south. It grows on bare peat or active *Sphagnum* on wet moorland and bogs.

In Berwickshire it is now largely confined to raised bogs and to a very few other moorland localities, notably around Dowlaw Moss 86, but with only one locality known on the blanket bog of the Lammermuirs, testimony to its degraded state. Much the largest population is at Dogden Moss 64 where it is constant across the whole moss. It has died out at Gordon Moss 64, following the spread of birch over the last remaining area of open bog, but survives precariously on the adjacent wetland.

Dryopteris carthusiana Narrow Buckler-fern

Wetland, native, other axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	61% hectads
Britain 1987-1999		19% tetrads	41% hectads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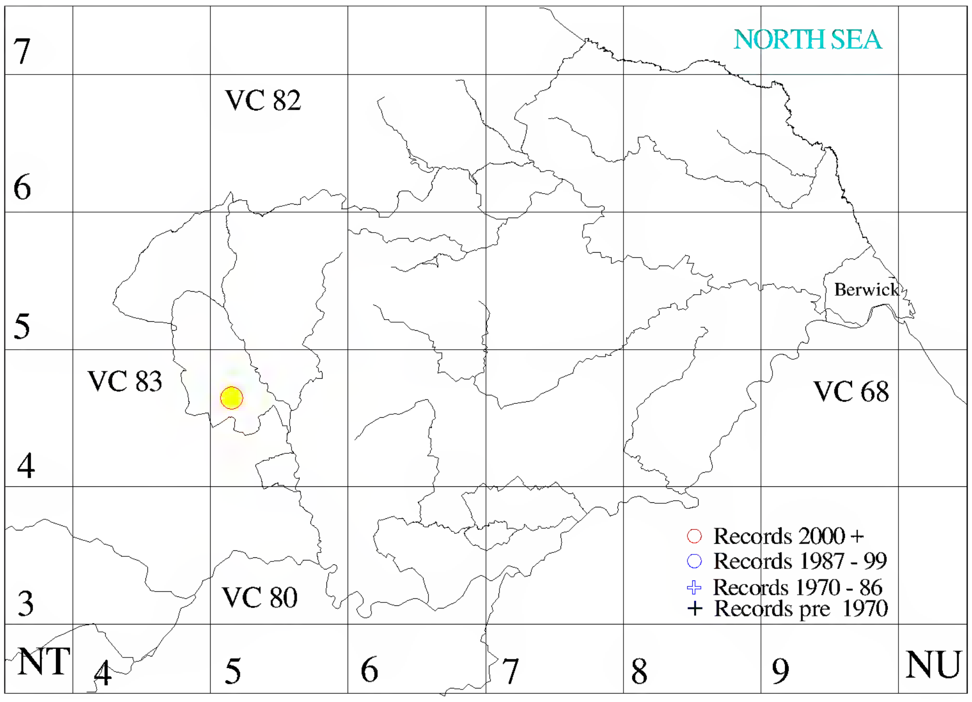
Over Britain as a whole *Dryopteris carthusiana* is a lowland fern of fens and carr woodland. The Berwickshire distribution is notably localised. It is found in slightly acidic fen and carr woodland around the edges of raised bog communities at Longmuir Moss 45, Redpath Moss 63, Gordon Moss 64, Everett Moss 64, Dogden Moss 64, Drone Moss 86 and Long Moss on Coldingham Common 86, and also in wet moorland near these sites and in a few other places. Many of the populations are of a few modest groups of plants.

The hybrid with *Dryopteris dilatata* Broad Buckler-fern, *Dryopteris x deweveri*, occurs. It is usually found where a wetland has been disturbed leading to some drying-out and colonisation by *D. dilatata*. The hybrid has been recorded in ten monads. The frequency of the hybrid is perhaps the best available evidence of the habitat disturbance and destruction that is thought to be considerably reducing the frequency and abundance of *D. carthusiana*, but which is not evidenced by the map in view of the inadequate historical record.

Dryopteris oreades Mountain Male-fern

Rock, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		2% tetrads	6% hectads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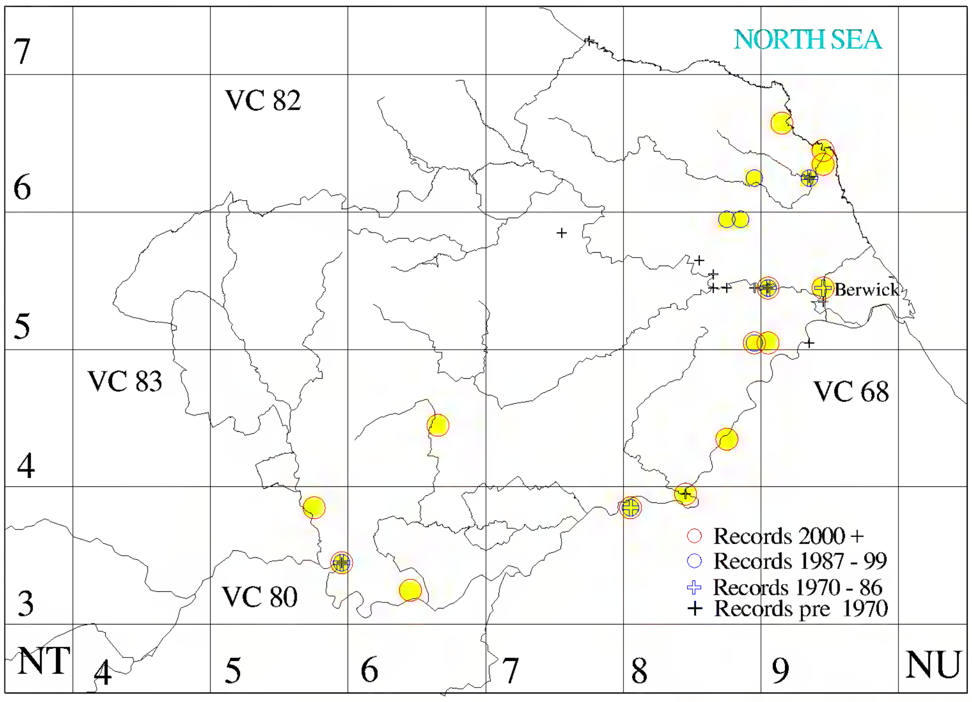
Dryopteris oreades is only locally common as a montane plant of screes and gullies on relatively acid substrates that is more frequent in the west of Britain. It is easily overlooked for other *Dryopteris* species.

It is well represented in the western Borders but was unknown in Berwickshire until discovered on screes by the Lauder Burn 54 in 2012. Only a few of the fronds were fertile.

Echium vulgare Viper's-bugloss

Rock, archaeophyte, rare or scarce

Berwickshire 1987-2013	9¾+5½ sites	5% tetrads	39% hectads
Britain 1987-1999		6% tetrads	26% hectads



Echium vulgare is patchily distributed across much of lowland Britain. It is most characteristic of dry or sandy grassland as on the coast and in Breckland, but it is also a colonist of ruderal habitats. It was formerly used in herbal remedies.

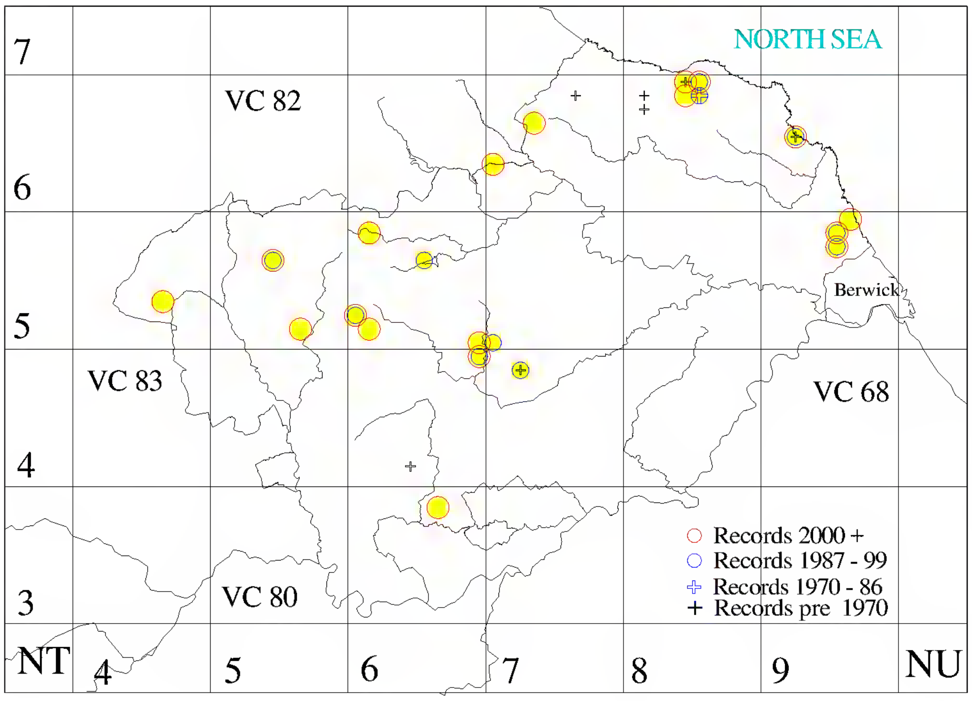
Until very recently the main Berwickshire colonies were by the River Tweed, where it is very persistent on scree at Gaitheugh 53, on an eroding bank at Dalcove 63, on a limestone outcrop opposite Carham 83 and a cliff near Milne Graden 84. There is a similar colony on the Kip Rock by the Eye Water 96. Much the largest colony is on the crumbling old runways at Winfield Airfield 85, 95. More recently it has been sown in a number of public places and at Causewaybank gravel pit 85. The presence of the *Echium* at Dalcove with *Hyoscyamus niger* Henbane in a community of former herbal plants suggests that all the Berwickshire colonies may be derived from introductions, as other more certain herbal introductions have similar distributions.

***Echium vulgare* with**
***Galium mollugo* behind at**
Winfield Airfield 2012

Eleocharis quinqueflora Few-flowered Spike-rush

Wetland, native, rare or scarce

Berwickshire 1987-2013	16½ sites	5% tetrads	48% hectads
Britain 1987-1999		14% tetrads	29% hectads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Eleocharis quinqueflora is widely distributed in northern England and Scotland but scarce elsewhere. It grows in base-rich flushes on stony or peaty soils.

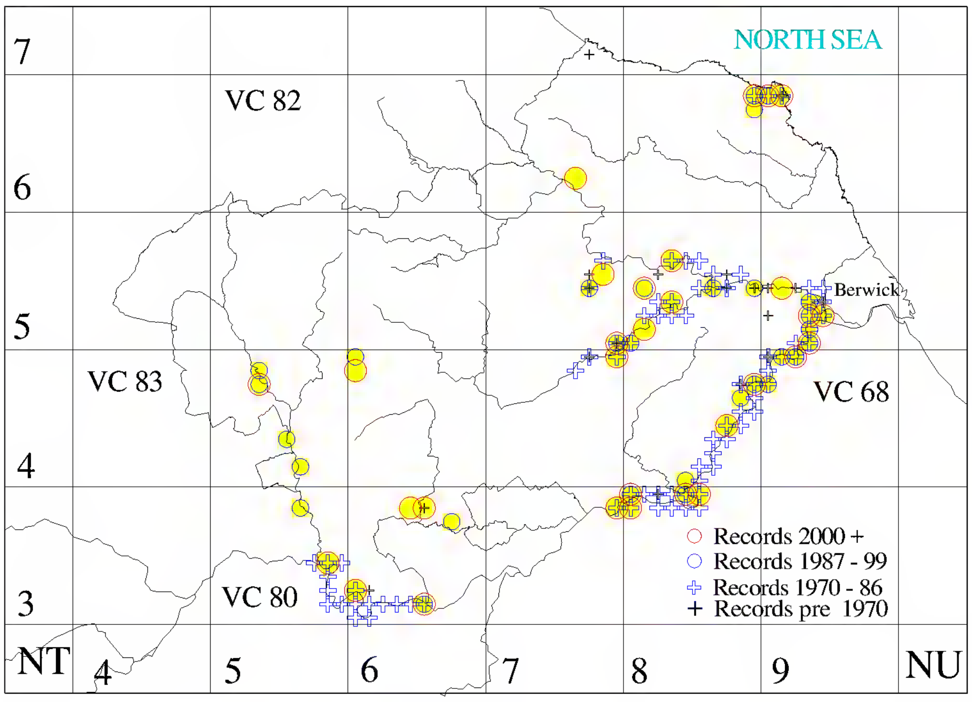
In Berwickshire it is found in moorland flushes at the edges of the Lammermuirs and in the few fragments of heath near the coast that show oceanic influence, as near Dowlaw Moss 86 and Lamberton Moor 95 and again on the coast itself at Yellow Craig 96. Almost all the colonies are small and vulnerable to disturbance.

It is strongly associated with *Carex dioica* Dioecious Sedge in Berwickshire. The historical record is an inadequte basis for the assessment of trends, but there have been some losses.

Elodea canadensis Canadian Waterweed

Aquatic, neophyte, prominent neophyte

Berwickshire 1987-2013	4% monads	11% tetrads	65% hectads
Britain 1987-1999		14% tetrads	48% hectads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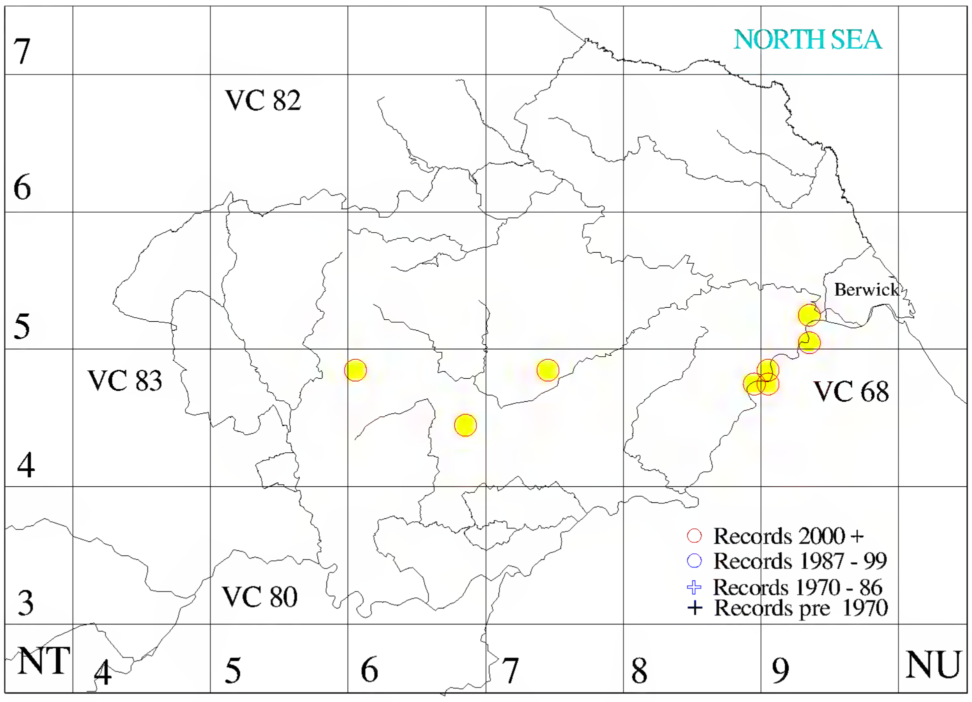
The story of *Elodea canadensis* has been much told. Sufficient to say that one of the first British records was a Berwickshire one, made by George Johnston at the Hen Poo at Duns Castle 75 in 1842 and that it very soon spread down the Whiteadder Water in amazing abundance. Only the female plant is present in Britain so all reproduction is by vegetative fragments. It is not known how it came to Britain, but one would guess that it hitched a lift on the roots of a deliberate ornamental introduction, such as American Skunk-cabbage *Lysichiton americanum* American Skunk-cabbage. *Elodea canadensis* is now very widespread in lowland Britain including Berwickshire, where nowadays it is usually quite a minor component of the aquatic flora. The reason for its loss of vigour has been widely debated without being brought to any firm conclusion.

Elodea nuttallii Nuttall's Waterweed

Aquatic, neophyte, prominent neophyte

Berwickshire 1987-2013	0.7% monads	2% tetrads	22% hectads
Britain 1987-1999		8% tetrads	27% hectads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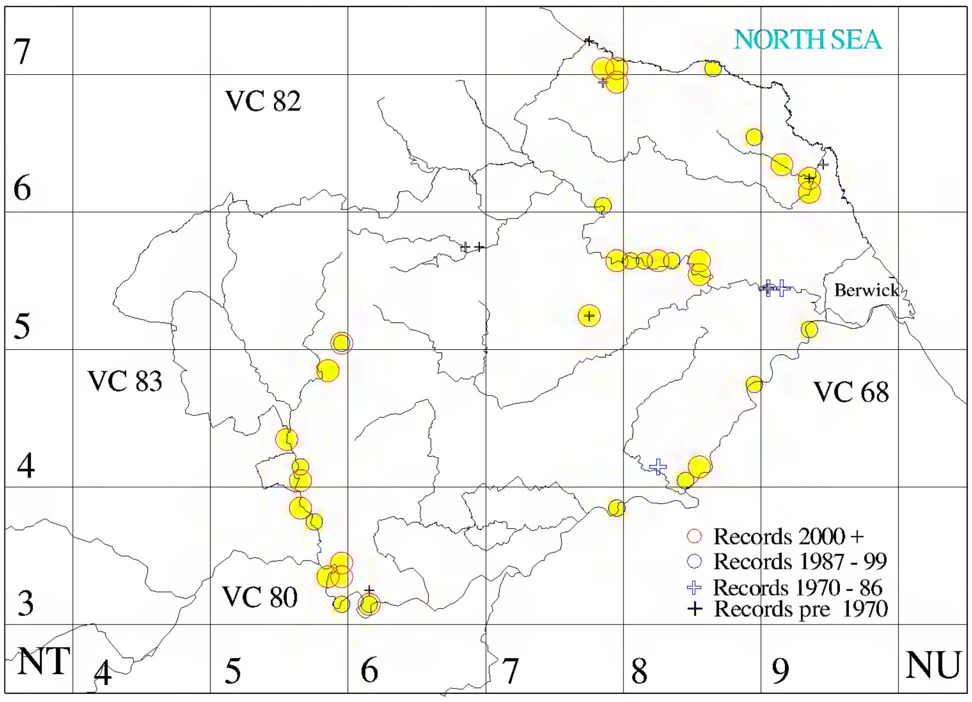
Elodea nuttallii is a very similar species to *E. canadensis* Canadian Waterweed that is now widespread in England but still scarce in Scotland.

It was first recorded in Berwickshire in the Tweed in 2004. There were those who heralded its arrival with alarm, but their fears have not been realised and it seems to be spreading only modestly in the Tweed between Blount Bank 84 and Paxton House 95. Meanwhile it has turned up far from the Tweed at Spottiswoode Loch 64, in a pond below Rumbleton 64 and at Marchmont 74, presumably distributed by waterfowl.

Elymus caninus Bearded Couch

Woodland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	61% hectads
Britain 1987-1999		21% tetrads	44% hectads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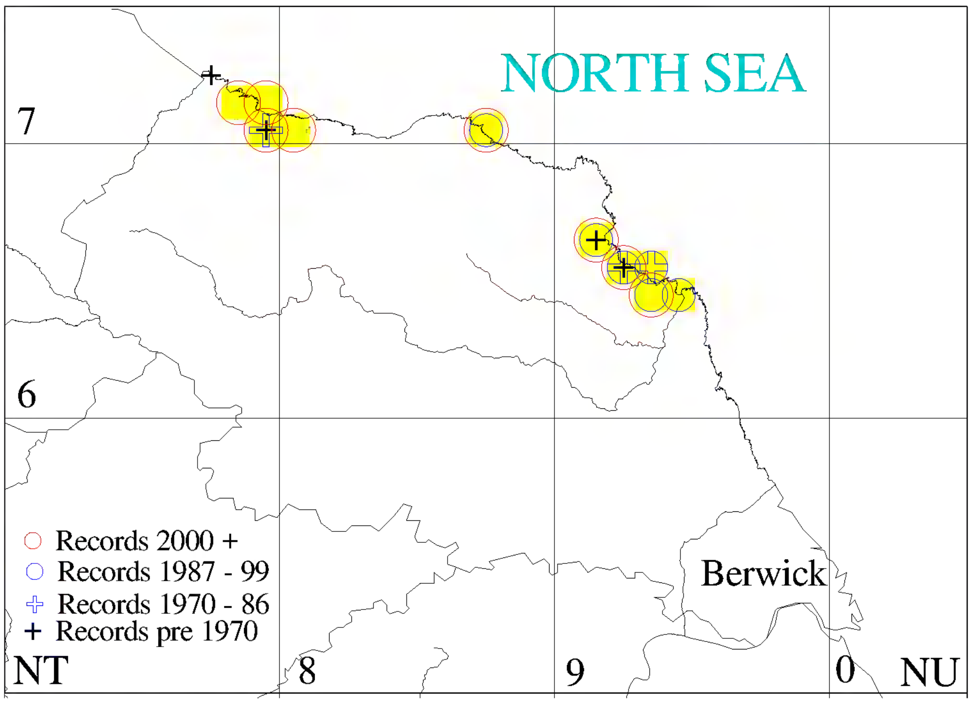
Elymus caninus is widespread in Britain, becoming more local to the north. It is a grass of shaded habitats on base-rich soils. In Berwickshire it is always found in riverside habitats with woodland that has some natural quality. It is quite frequent by the Leader Water and for a section of the Whiteadder Water where it is locally plentiful. Elsewhere it is scarce. This is a late-flowering grass that may be under-recorded as so much of the woodland recording has been carried out in the spring. Nevertheless the broad distribution now seems to have been established.

A modest degree of mobility along the river system is suspected. The historical record is not adequate for any assessment of trends.

Elytrigia juncea Sand Couch

Coast, native, rare or scarce

Berwickshire 1987-2013	7 sites	2% tetrads	13% hectads
Britain 1987-1999		3% tetrads	15% hectads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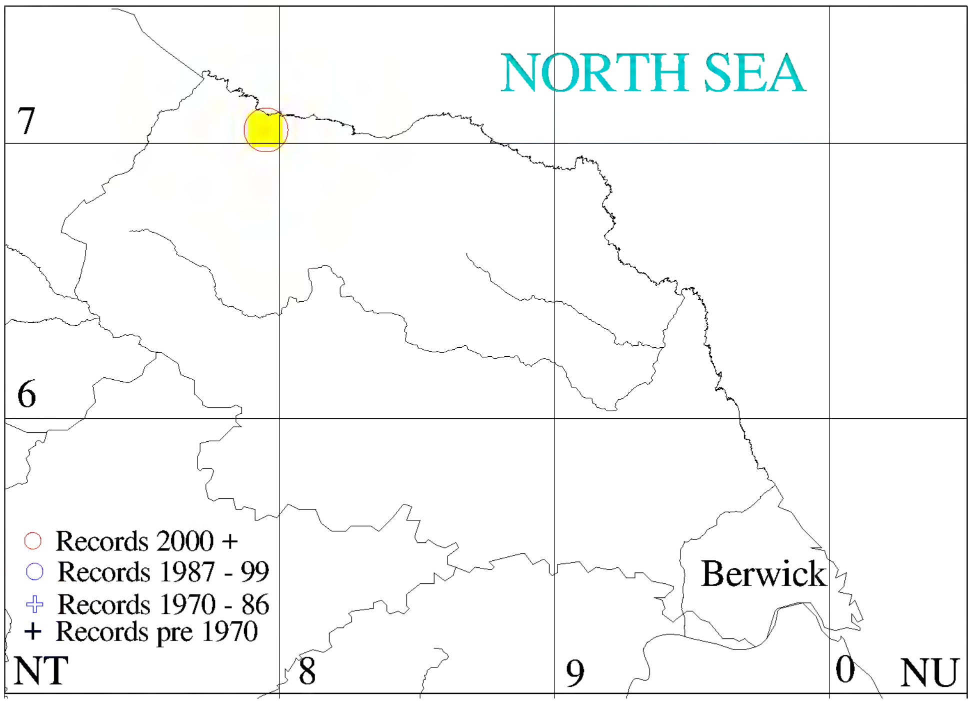
Elytrigia juncea is found all round the British coast growing on coastal sand above the strandline and on the seaward side of dunes.

It is poorly represented in Berwickshire due to the shortage of sandy beaches. It occurs at Pease Bay 77, below St Helen's Church 87, by Brander Heugh 87, at Coldingham Bay 96, at Yellow Craig 96 and around Eyemouth 96.

Elytrigia x laxa = E. juncea x repens A hybrid Couch

Coast, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.2% tetrads	2% hectads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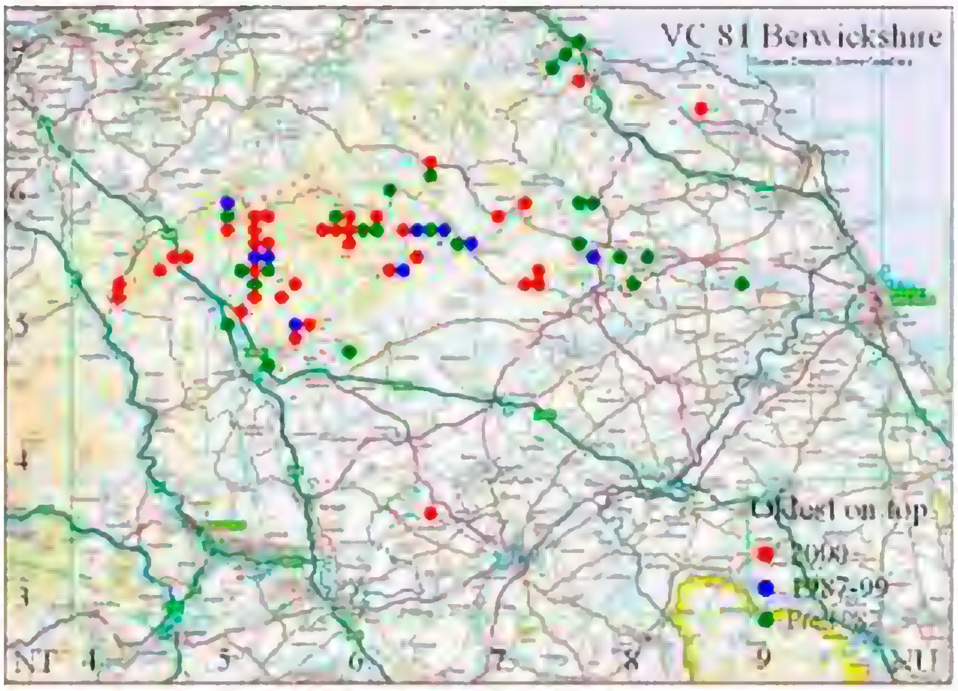
Elytrigia x laxa has been found in scattered sites round the British coast where it may form substantial colonies.

In Berwickshire it is currently known only at Pease Bay 77 where both its parents are present nearby.

Epilobium brunnescens New Zealand Willowherb

Moorland, neophyte, prominent neophyte

Berwickshire 1987-2013	4% monads	10% tetrads	39% hectads
Britain 1987-1999		23% tetrads	35% hectads



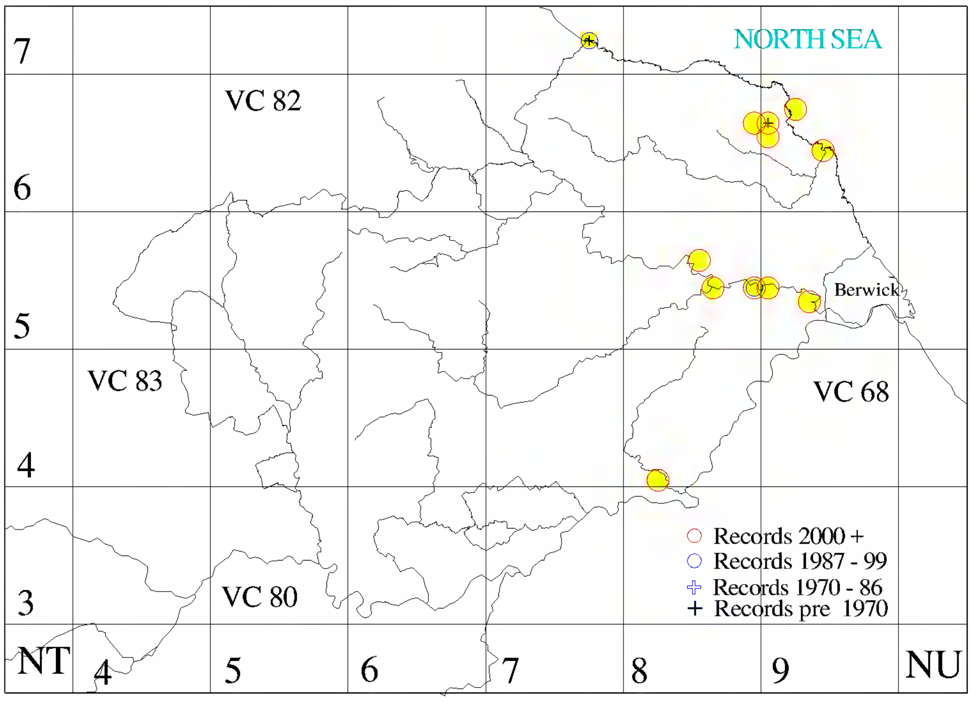
Muirburn does much to discourage the colonisation of moorland by incomers, except for two species with wind-borne seeds, *Epilobium angustifolium* Rosebay Willowherb and *E. brunnescens*. While poor plants of *E. angustifolium* are quite frequent on the open moor in the aftermath to muirburn, the small *E. brunnescens* species is a specialist of wet rock ledges and eroding banks and it is now almost ubiquitous on the Scottish Hills. It was first recorded in Berwickshire in 1938. The records are mainly in the Lammermuirs where it is unobtrusive and does not compete directly with native species as it exploits unstable habitats where its ability to seed in quickly when an open patch appears gives it an advantage for a season or two.

While *E. brunnescens* appears to have been increasing in the Lammermuirs, there have been fewer records from lower ground than in the past. While some of the lowland populations are likely to have been more or less casual, there does seem to be evidence of a real decrease.

Epilobium roseum Pale Willowherb

Woodland, native, rare or scarce

Berwickshire 1987-2013	10½ sites	3% tetrads	26% hectads
Britain 1987-1999		6% tetrads	17% hectads



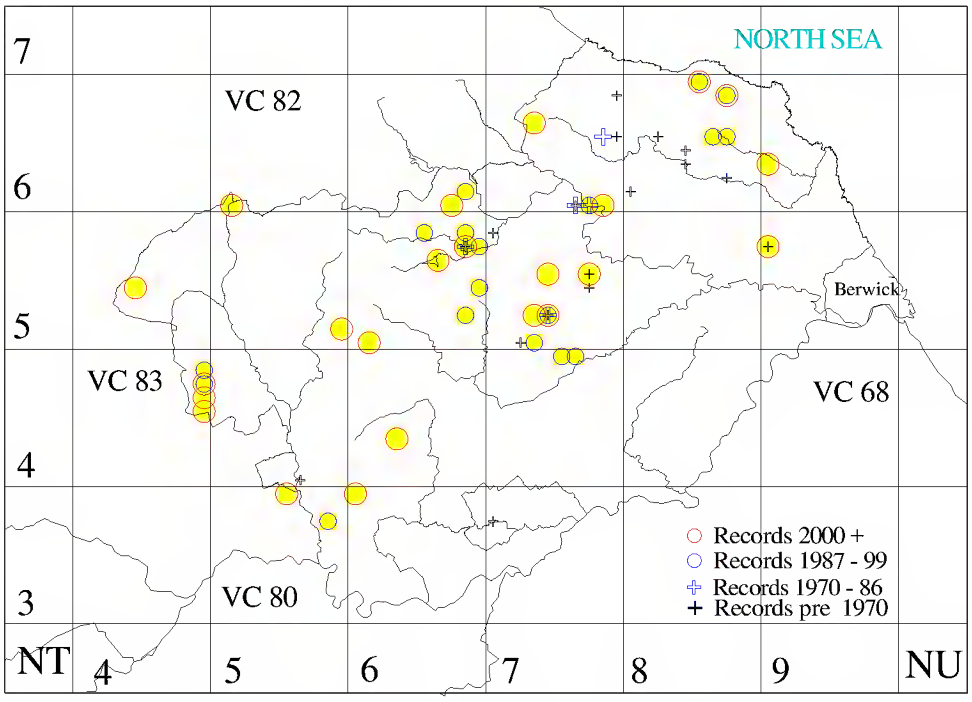
Epilobium roseum is widely distributed in England but mainly confined to the central belt in Scotland. It favours damp woodland and ruderal habitats.

Long overlooked in Berwickshire, this willowherb has now been found as a street weed in Coldingham 96, St Abbs 96 and Eyemouth 96 and in several places in damp woodland by the Whiteadder Water as near Edington Mill 85, at the foot of the Foulden braes 95 and near Edrington Castle 95 where one plant had double flowers. It has also occurred at the foot of Dunglass Dean 77 and by Hirsel Lake 84. It may or may not be native to Berwickshire.

Equisetum sylvaticum Wood Horsetail

Woodland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	65% hectads
Britain 1987-1999		23% tetrads	40% hectads



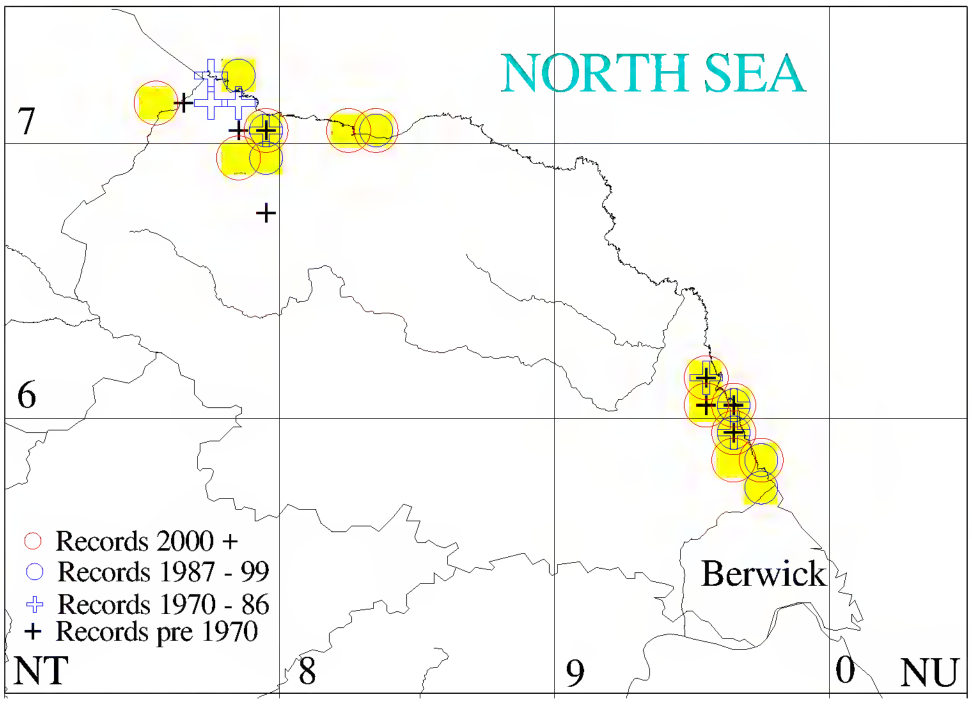
Equisetum sylvaticum has a predominantly upland distribution in Britain. It grows most typically at the moorland-edge: along rocky wooded burnsides and in birchwood on more open ground. Its Berwickshire distribution is very much that of a plant in decline that has been driven back over a long period to a series of isolated colonies, many of them in poor habitat. Few fine colonies remain, the best are in the Langtonlees woods 75 and at the head of Lumsdaine Dean 86.

Many colonies have only been discovered recently, but almost all of these are small colonies in poor habitat. Enough populations have not been refound recently to point strongly to a continuing decline. As a horsetail, its spores are widely distributed by the wind and the potential for colonisation clearly exists, but it is not known whether any of the populations are recently established. Some of the burnside colonies are on steep banks subject to slippages and it possible that a few of these are indeed recent.

Equisetum telmateia Great Horsetail

Coast, native, selected axiophyte

Berwickshire 1987-2013	1% monads	2% tetrads	22% hectads
Britain 1987-1999		12% tetrads	36% hectads



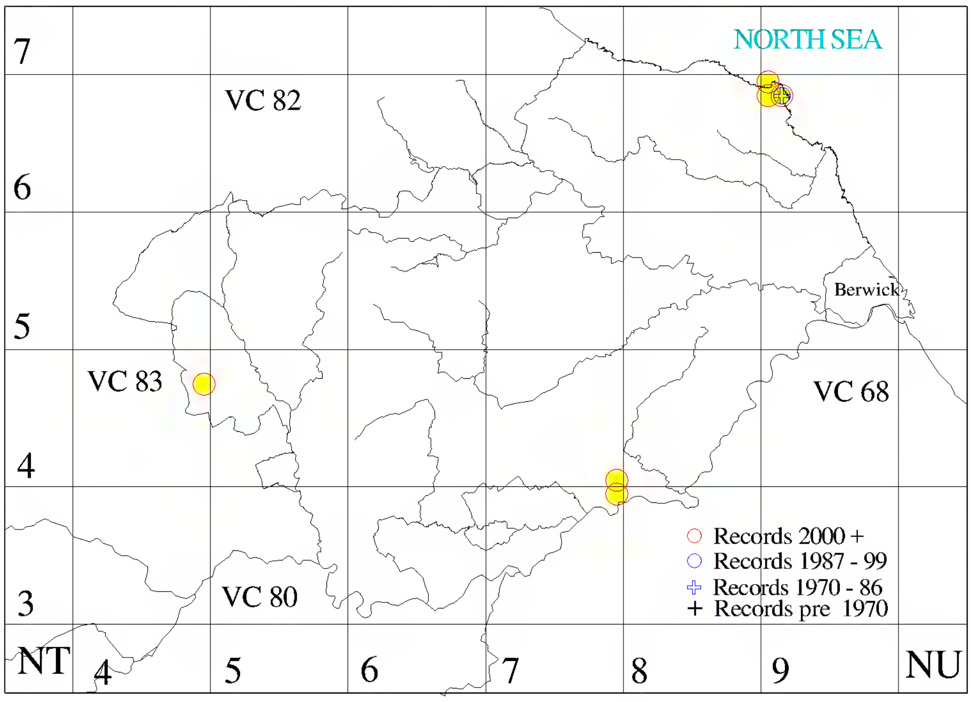
Equisetum telmateia is widespread in southern Britain but much scarcer in Scotland. It favours base-rich heavy soils along spring lines. These conditions are met in Berwickshire in the Pease and Dunglass deans 77 and a little to the east, but not again until the Carboniferous outcrops below Lamberton 95, where *E. telmateia* is a feature of the undercliff to the immediate north of the English border. This species is indicative of habitat suitable for some of the southern element in the county's flora.

There is no evidence of recent change in the distribution of this very robust species.

Equisetum x litorale = E. arvense x fluviatile Shore Horsetail

Wetland, native, rare or scarce

Berwickshire 1987-2013	4 sites	1% tetrads	17% hectads
Britain 1987-1999		0.7% tetrads	8% hectads



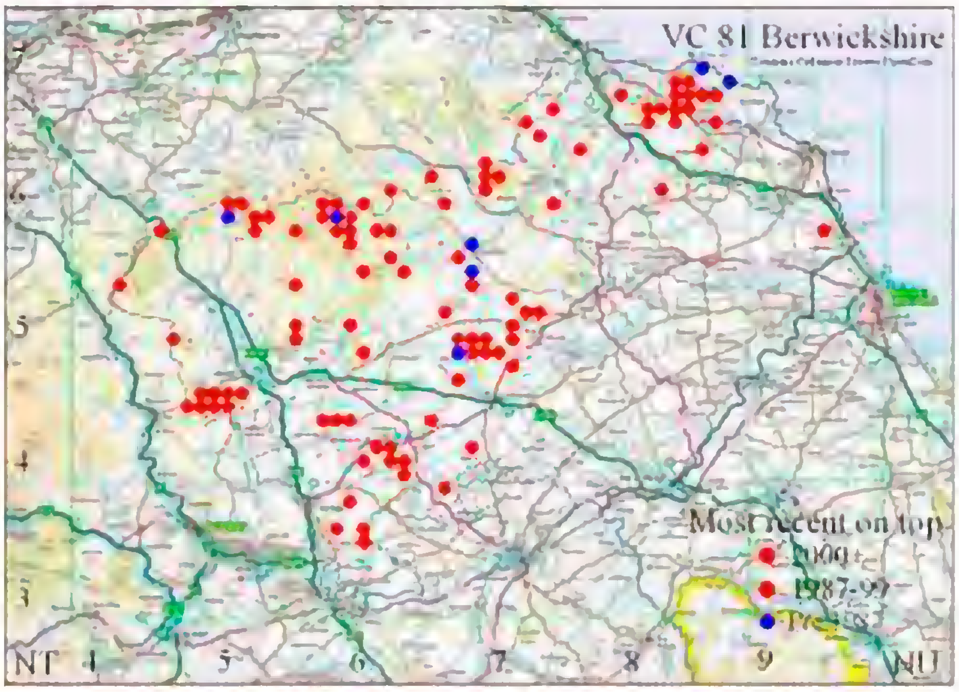
Both the parents of *Equisetum x litorale* are very widespread in Britain and the hybrid has been found in scattered locations throughout their joint range in habitats that are wet, but not wet enough to favour *E. fluviatile* Water Horsetail. It can form large colonies that might on occasion be dispersed vegetatively.

In Berwickshire the hybrid is known by a burnside above Whitlaw 44, in Birgham Wood 73, 74 and at St Abbs Head 96. The main colony at St Abbs Head is by Mire Loch and could have arisen during the disturbance when the loch was dammed in 1902. There is also a separate colony in a flush near Wuddy Heugh which might have established from fragments carried unwittingly by livestock or vehicles from the Mire Loch colony.

Erica tetralix Cross-leaved Heath

Moorland, native, other axiophyte

Berwickshire 1987-2013	8% monads	20% tetrads	65% hectads
Britain 1987-1999		40% tetrads	60% hectads



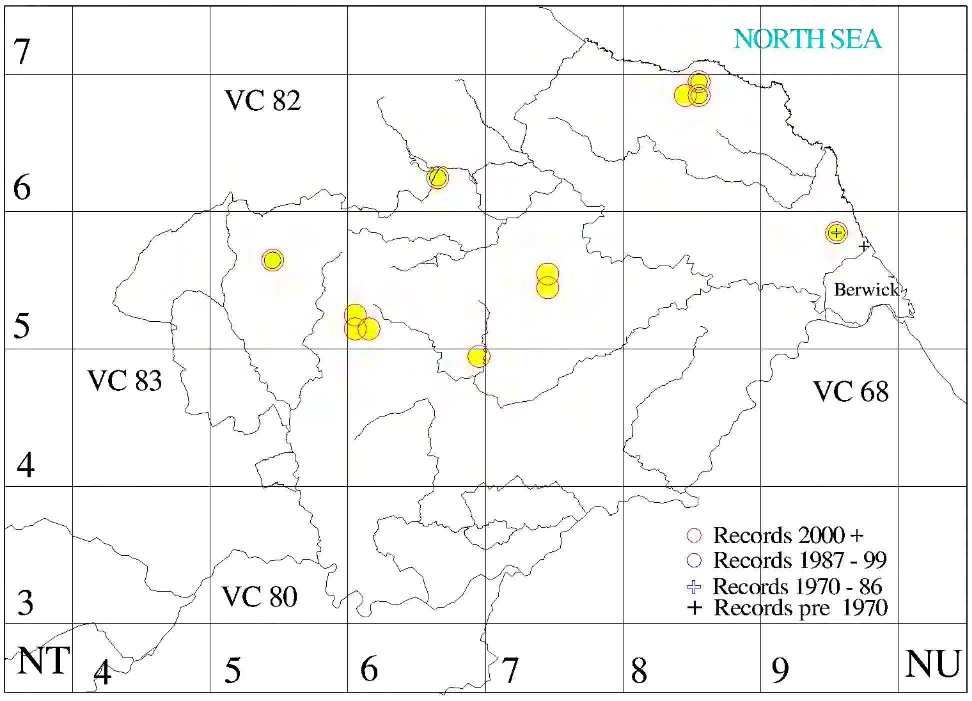
Erica tetralix is ubiquitous at 10km scale across the moorland of Britain but in Berwickshire this conceals a much more localised distribution at finer scales as this is a species of wet peat. The Berwickshire map is difficult to interpret because moorland has been selectively sampled with emphasis on the species-rich areas. Nevertheless the concentration of records around Lauder Common 44, 45, Dogden Moss 64, Coldingham Common 86 and some of the uppermost parts of the Dye Water 65 do correspond with areas with less muirburn and deeper peat. This species could doubtless be found in many moorland 1km squares where it is not recorded but quantities are likely to be small.

The historical record is not adequate for the demonstration of trends.

Eriophorum latifolium Broad-leaved Cottongrass

Wetland, native, rare or scarce

Berwickshire 1987-2013	8 sites	2% tetrads	30% hectads
Britain 1987-1999		4% tetrads	11% hectads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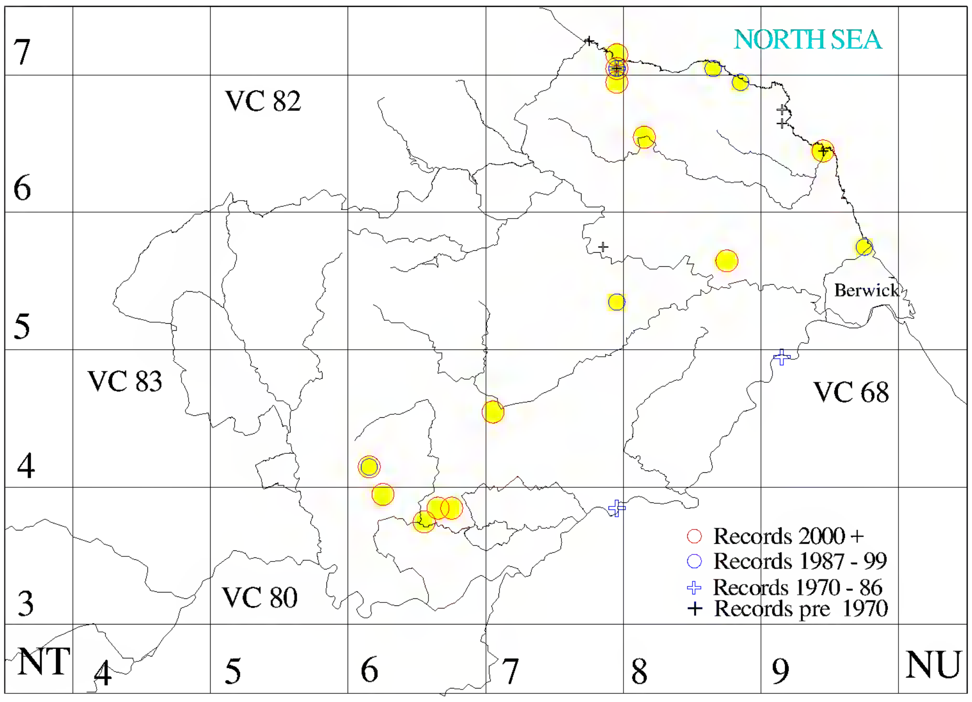
Eriophorum latifolium is a rather local plant found mainly in northern England and Scotland. Its habitat is base-rich flushes.

There are just a few representative colonies in Berwickshire. There is a cluster of sites near Raecleugh 65, a further cluster at Hells Cleugh 75 and again around Dowlaw Moss 86 where the moorland is subject to oceanic influence. It also occurs by the Whalplaw Burn, by the Fangrist Burn 64, by the Killmade Burn 66 and on Lamberton Moor 95. The habitat is particularly vulnerable to small scale disturbance. The historical record is very incomplete, as this species was poorly understood in the past.

Erodium cicutarium Common Stork's-bill

Grassland, native, rare or scarce

Berwickshire 1987-2013	12½ sites	4% tetrads	48% hectads
Britain 1987-1999		18% tetrads	46% hectads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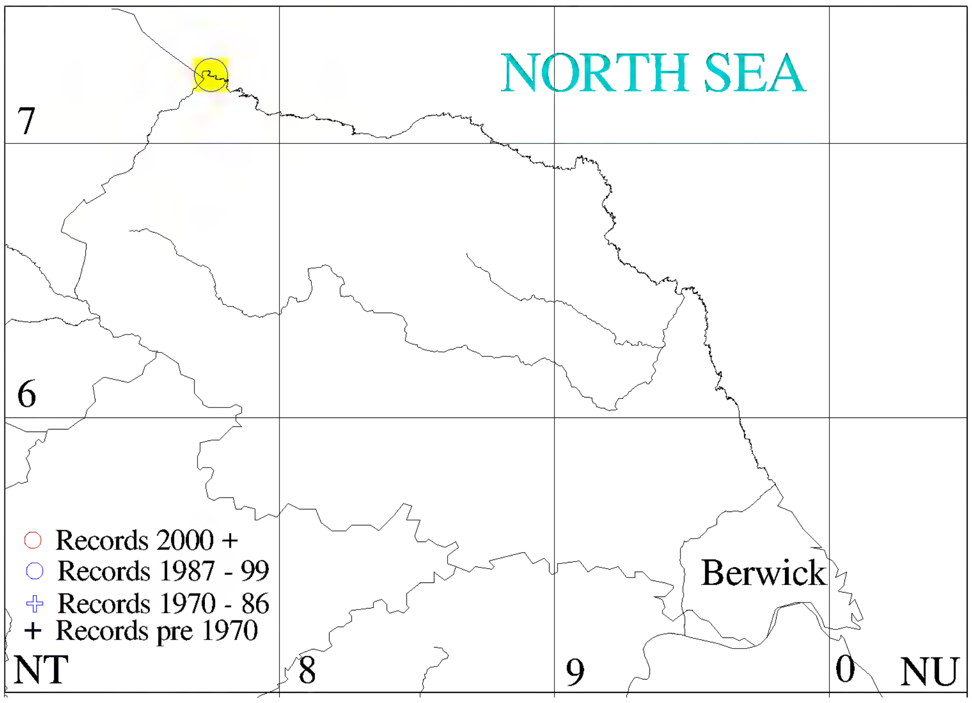
Erodium cicutarium is widespread in England but mainly coastal in Scotland. Its native habitat is sandy grassland but it is often found in ruderal situations.

It is highly localised in Berwickshire. There are tiny colonies at Pease Bay 77 and the foot of Pease Dean 77 with outliers at Glen Fin 86. Some of the plants at Pease Dean have white flowers. Further tiny colonies occur near Girrick 63 and at Muckle Thairn 63 in natural grassland on the Kelso trap lavas. All the remaining recent records appear to relate to more or less casual introductions.

Erophila majuscula Hairy Whitlowgrass

Coast, native, rare or scarce

Berwickshire 1987-2013	½ site	0.3% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	2% hectads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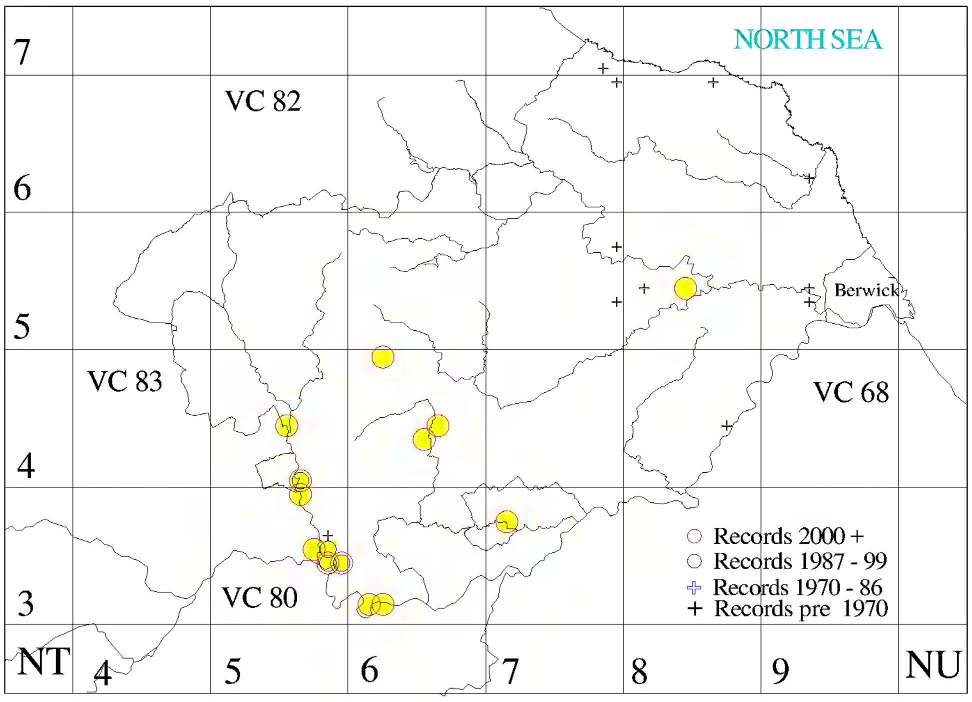
Erophila majuscula is a rather distinctive diploid segregate of the *Erophila verna* aggregate has as yet only been recorded in very scattered localities within the range of the aggregate, which is very widespread in Britain. The segrgate is perhaps most often found in sandy grassland.

Only once recorded in Berwickshire: its very hairy, almost silvery flower-head attracted attention at Ramsheugh Bay 77 in 1998 but it has not been seen there since.

Euonymus europaeus Spindle

Woodland, native, rare or scarce

Berwickshire 1987-2013	5¾+5 sites	3% tetrads	26% hectads
Britain 1987-1999		27% tetrads	40% hectads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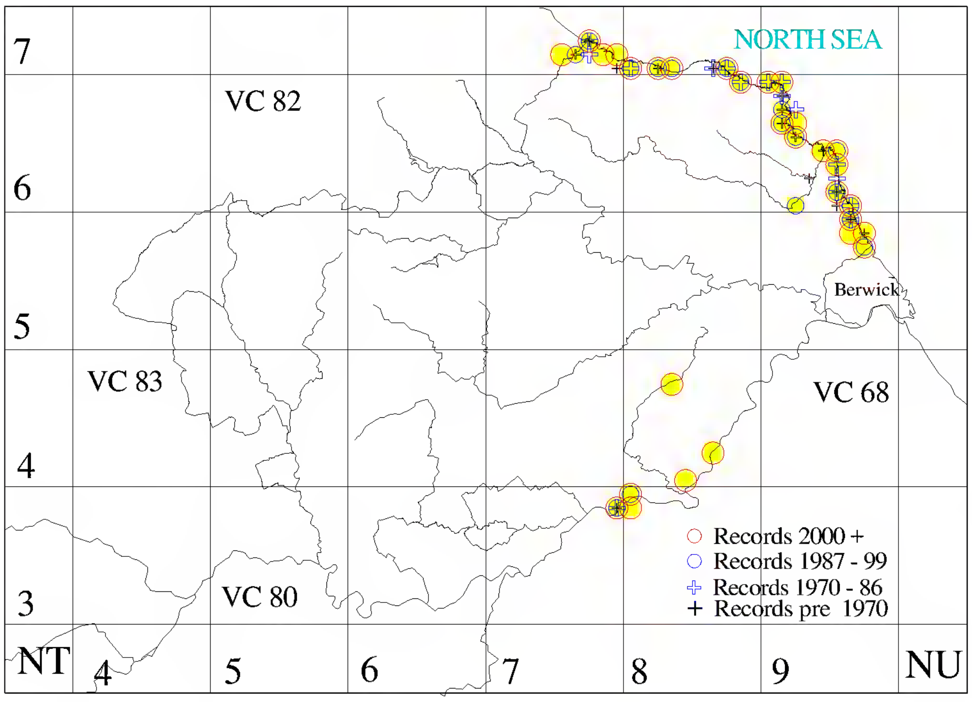
Euonymus europaeus is is widespread in England, but rare in Scotland. It is a woodland shrub, often found on calcareous soils.

It is reduced to a few bushes in Berwickshire as a native, but is also planted. The remaining native sites extend down the Leader Water from Whitslaid 54 via Carolside 54 to its junction with the Tweed and downstream again to Gaitheugh 53 where the best population is found by the river and up a side dean. It is found in wet ground near the river and on, or at the foot of, wet cliffs. All other recent records are considered to be plantings.

Eupatorium cannabinum Hemp-agrimony

Coast, native, other axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	35% hectads
Britain 1987-1999		25% tetrads	53% hectads



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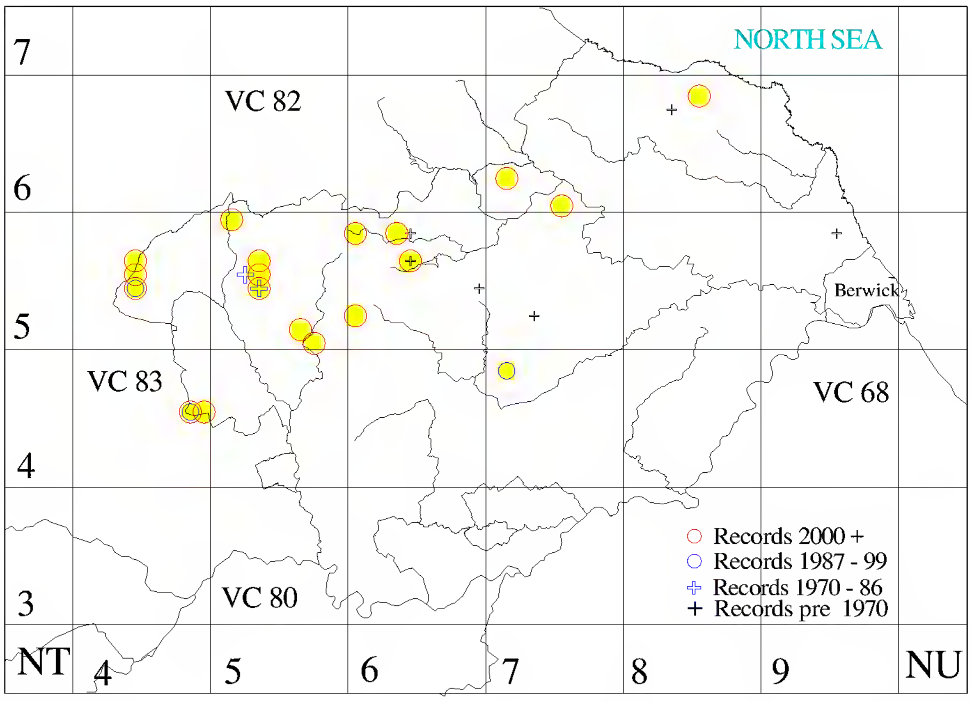
Eupatorium cannabinum has a rather similar national distribution to *Equisetum telmateia* Great Horsetail, but does not demand such deep water-logged soils as that species. Along the Berwickshire coast it is able to exploit a wide range of wet habitats, most typically flushes and rivulets towards the foot of the cliffs but also gullies much higher on the cliffs. Inland it is largely restricted to the base of sandstone cliffs along the Tweed where water seeps through, as at Birgham Haugh Wood 73, opposite Carham 83, above Coldstream Bridge 84 and above Tweedmill 84.

There is no evidence of recent change in the distribution of this very robust species.

Euphrasia micrantha Eyebright

Moorland, native, rare or scarce

Berwickshire 1987-2013	14¼ sites	4% tetrads	30% hectads
Britain 1987-1999		4% tetrads	13% hectads



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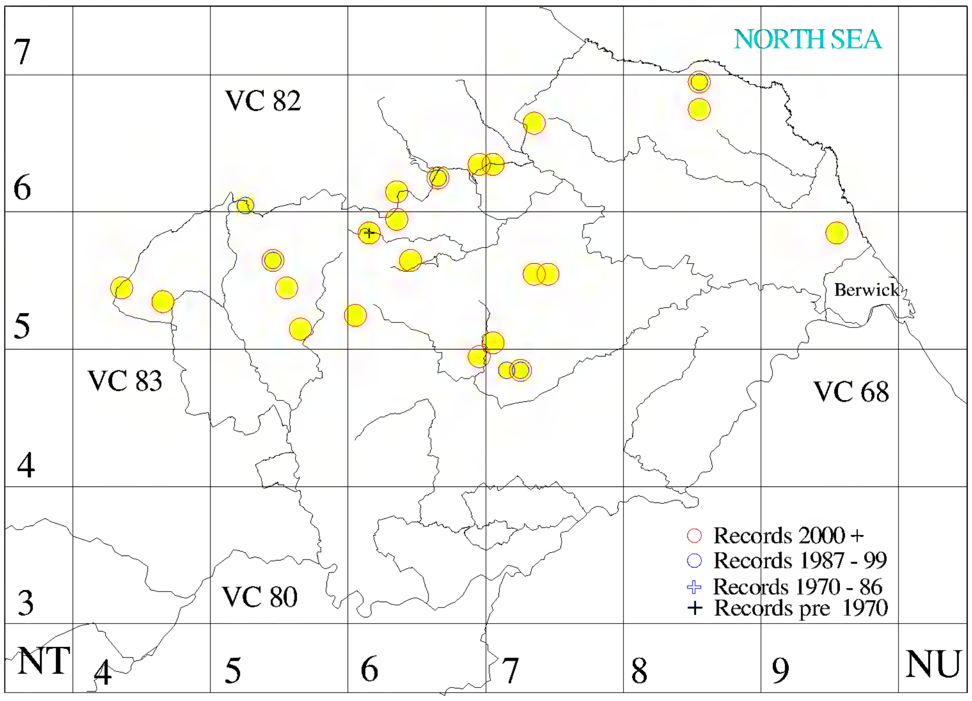
Euphrasia micrantha is widespread in the hills of northern England and Scotland, but its frequency is unclear. It is a plant of dry moorland where its purple flowers mimic those of the *Calluna* Heather with which it grows. Presumably pollinators fooled into visiting the *Euphrasia* have a good chance of visiting a second plant in the colony before returning to the more rewarding *Calluna*.

Although this species is scarce in open moorland it has recently prospered amazingly on stony tracksides in forestry in association with *Lycopodium clavatum* Stag's-horn Clubmoss. Moorland sites include Lauder Common 44, screes by the Soonhope Burn 55, the top of rocky banks near the Dye Water 65 and Coldingham Common 86. Forestry sites with very large colonies include Hartside Hill 45 and Dunter Law 76.

Euphrasia scottica Eyebright

Wetland, native, rare or scarce

Berwickshire 1987-2013	21¾ sites	7% tetrads	48% hectads
Britain 1987-1999		2% tetrads	10% hectads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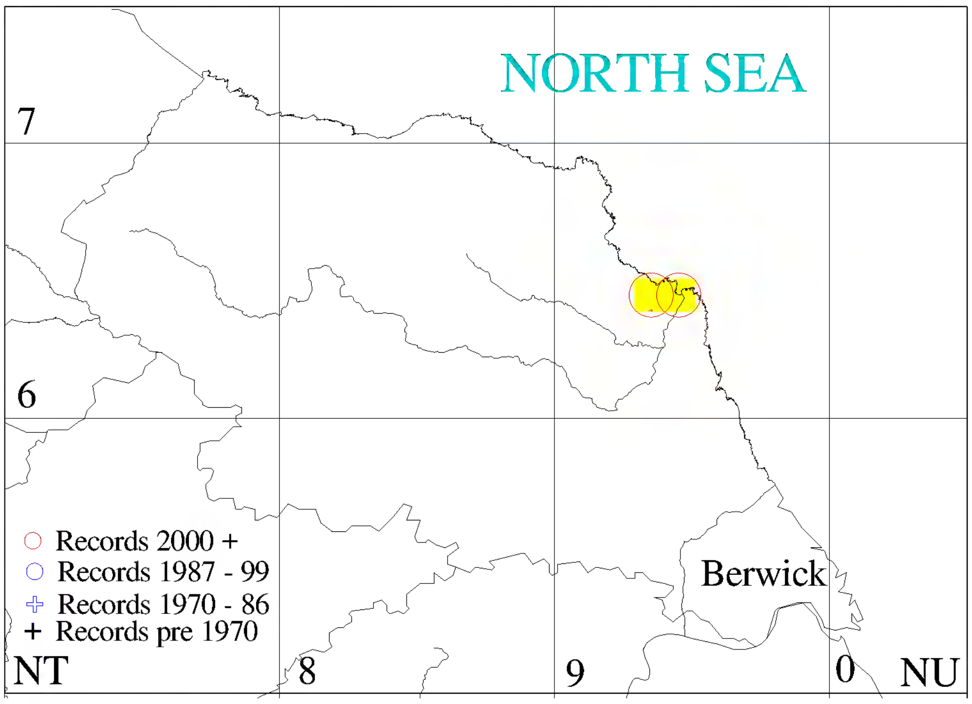
Euphrasia scottica is widespread in the hills of northern England and Scotland, but its frequency is unclear. It grows in base-rich moorland flushes in the east but is more catholic in its choice of habitat in the west.

Formerly thought to be scarce in Berwickshire but now known from many sites. It is a good indicator of species-rich habitat. There are representative sites in Threeburnford Cleugh 45, by the Whalplaw and Wheel Burns 55, by the Fangrist Burn 75, in Hells Cleugh 75 and on Lamberton Moor 95. Hybrid plants involving this species sometimes occur in grassland adjacent to the flushes where it grows.

Euphrasia tetraquetra Eyebright

Coast, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	4% hectads
Britain 1987-1999		0.6% tetrads	6% hectads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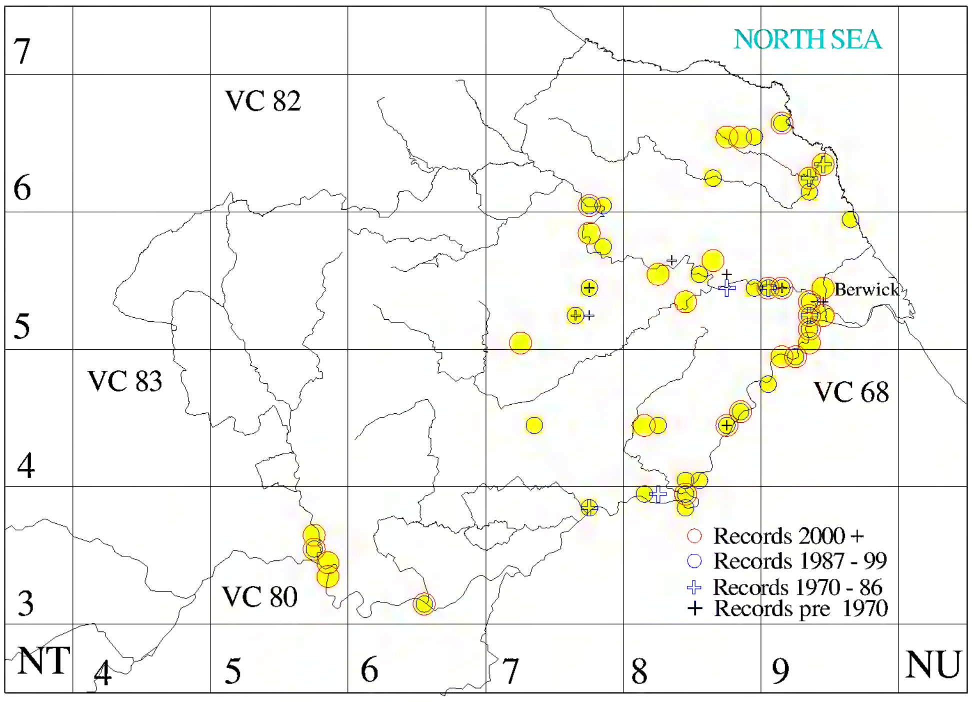
Euphrasia tetraquetra is found round much of the coast in southwest England and Wales but is much scarcer in the north and east. It is a plant of coastal grassland.

It is only known in Berwickshire near Eyemouth Fort 96 and at Gunsgreen 96 where it grows at the cliff top in small quantity.

Fallopia japonica Japanese Knotweed

Riverside, neophyte, intrusive neophyte

Berwickshire 1987-2013	4% monads	12% tetrads	57% hectads
Britain 1987-1999		34% tetrads	66% hectads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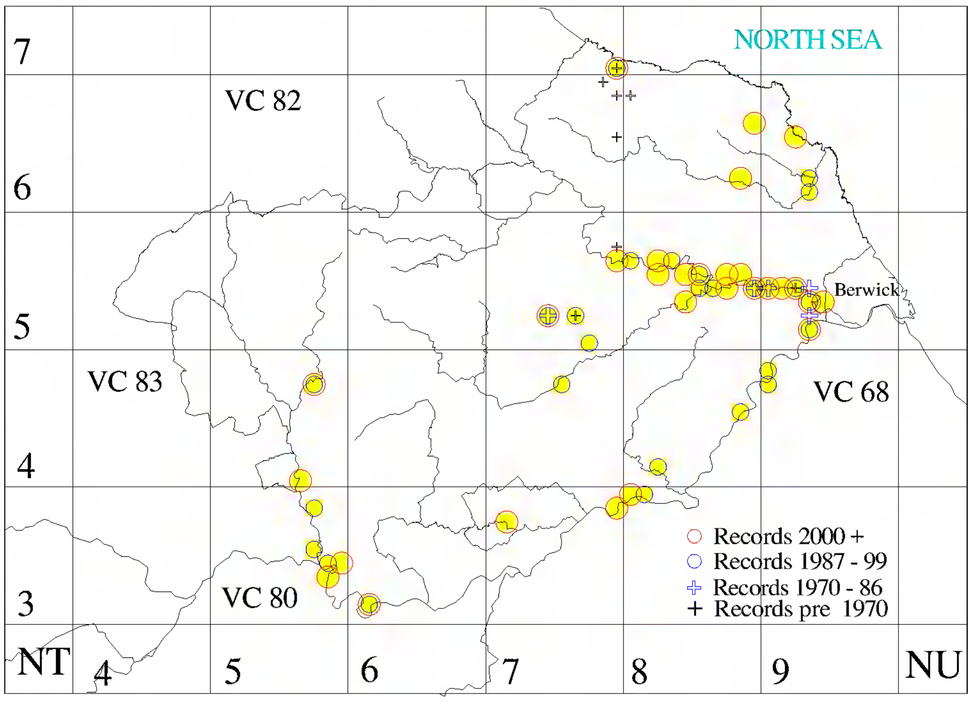
Fallopia japonica is now very widespread in Britain, except in the hills, on waste ground and watersides, including sea lochs. The Berwickshire distribution map suggests that its image as a seriously invasive plant is fully justified, as it is now present in a majority of the monads along the rivers which it has colonised. The reality on the ground is, as yet, rather less alarming as there is often just one patch a few metres in diameter in a stretch of the river and new colonies, arising from vegetative fragments, are infrequent. The situation is not dissimilar to that for *Symphoricarpos albus* Snowberry, which is usually tolerated. An eradication programme for the *Fallopia* has now been underway for several years on the River Tweed, but it is doubtful whether any colonies have yet been eliminated rather than controlled.

Festuca gigantea (Schedonorus giganteus) Giant Fescue

Woodland, native, other axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	61% hectads
Britain 1987-1999		38% tetrads	59% hectads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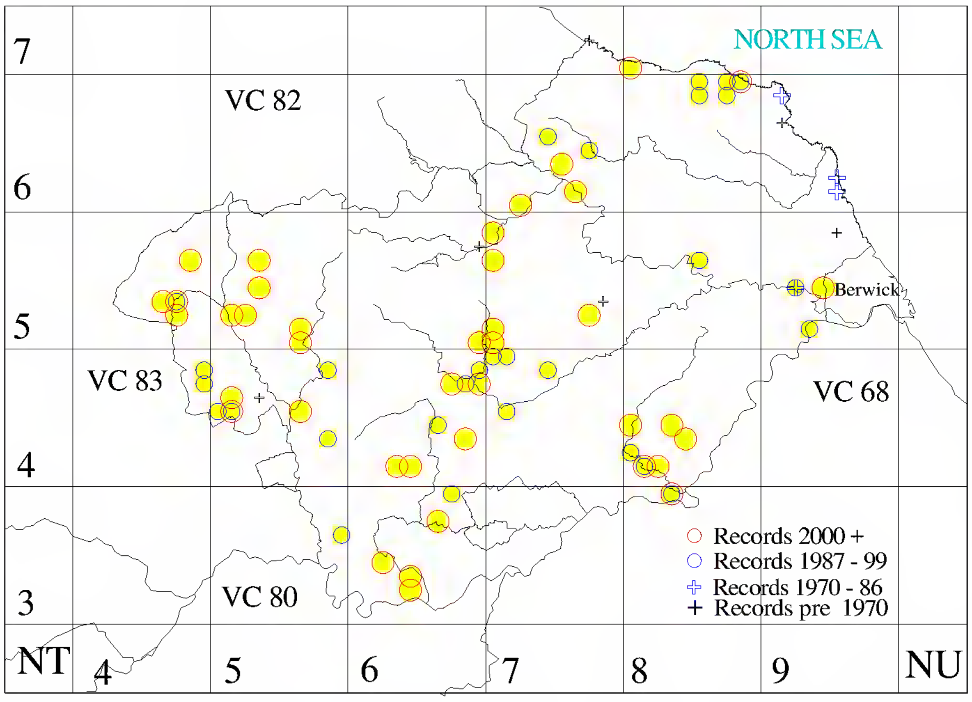
Festuca gigantea is a woodland grass that is very widespread in England and Wales but more local in Scotland. In Berwickshire it is usually associated with *Brachypodium sylvaticum* False-brome and *Bromopsis ramosa* Hairy-brome but is often only present in small numbers. It is more or less constant along much of the Whiteadder Water where there is a mix of isolated casual tufts along the riverside and more permanent colonies in woodland. It is surprisingly scarce by the Leader Water where there is much seemingly suitable habitat and is even scarcer elsewhere.

Given the colonising potential of this species, due to its adhesive awns, the apparent recent decline is unexpected. It may be that most of the losses relate to more or less casual occurrences.

Festuca pratensis (Schedonorus pratensis) Meadow Fescue

Grassland, native, other axiophyte

Berwickshire 1987-2013	5% monads	15% tetrads	74% hectads
Britain 1987-1999		33% tetrads	55% hectads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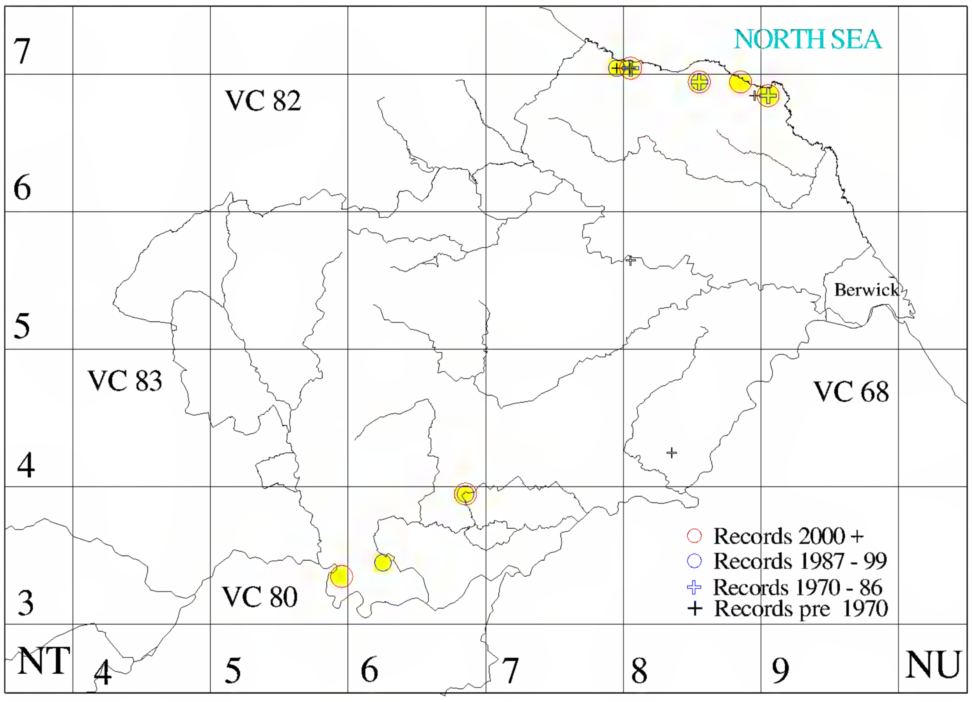
Festuca pratensis is very widespread in Britain north to mid-Scotland. Although formerly included in some sown grass mixtures, the Berwickshire distribution is very much what might be expected of a native population. Agricultural practice appears to have eliminated this grass from most of the arable areas leaving relict populations only in special situations, such as the series of grassland and wetland habitats along the Leet Water where this species is present in damp grassland. The remaining strongholds are along the lower reaches of the hill burns such as the Fangrist Burn 64 and the Leader Water near Airhouse Wood 45. *F. pratensis* is not a common grass on the coast, unlike *F. arundinacea* Tall Fescue, and it is suspected that some of the coastal records are errors for the latter species, though *F. pratensis* has probably been overlooked recently in the complex of habitats around Dowlaw Moss and Lumsdaine Dean 86. This is still an under-recorded grass and the historical record is not good enough to demonstrate trends over time. *X Festulolium loliaceum*, the hybrid with *Lolium perenne* Rye Grass is recorded from 7 monads.

Filago minima Small Cudweed

Grassland, native, rare or scarce

Berwickshire 1987-2013	7 sites	2% tetrads	26% hectads
Britain 1987-1999		4% tetrads	15% hectads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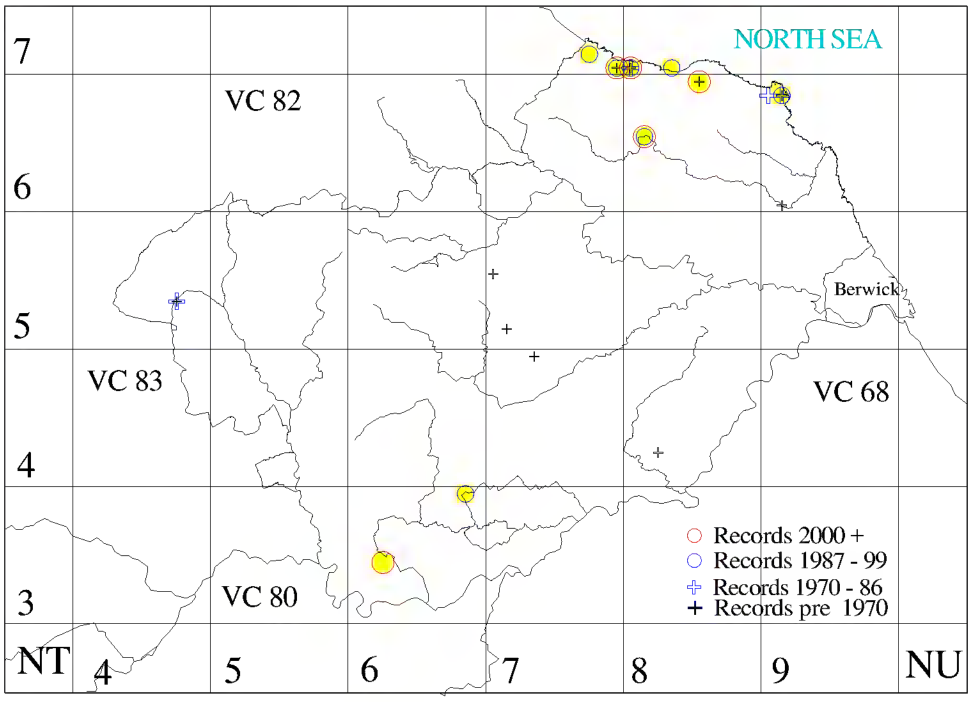
Filago minima is a local plant of sandy grassland that is mainly eastern in Scotland but more widespread in England.

It is now very scarce in Berwickshire and only the colonies at Lumsdaine Dean 86 seem at all secure. There are small colonies at Butchercote Craigs 63, Hareheugh Craigs 63 and at Old Cambus Quarry 87. The remaining colonies occupy small refugia in grassland that is becoming unsuitable owing to eutrophication as on Bemersyde Hill 53, by Westerside Dean 86 and near Millar's Moss 96.

Filago vulgaris Common Cudweed

Grassland, native, rare or scarce

Berwickshire 1987-2013	5¾ sites	2% tetrads	22% hectads
Britain 1987-1999		5% tetrads	17% hectads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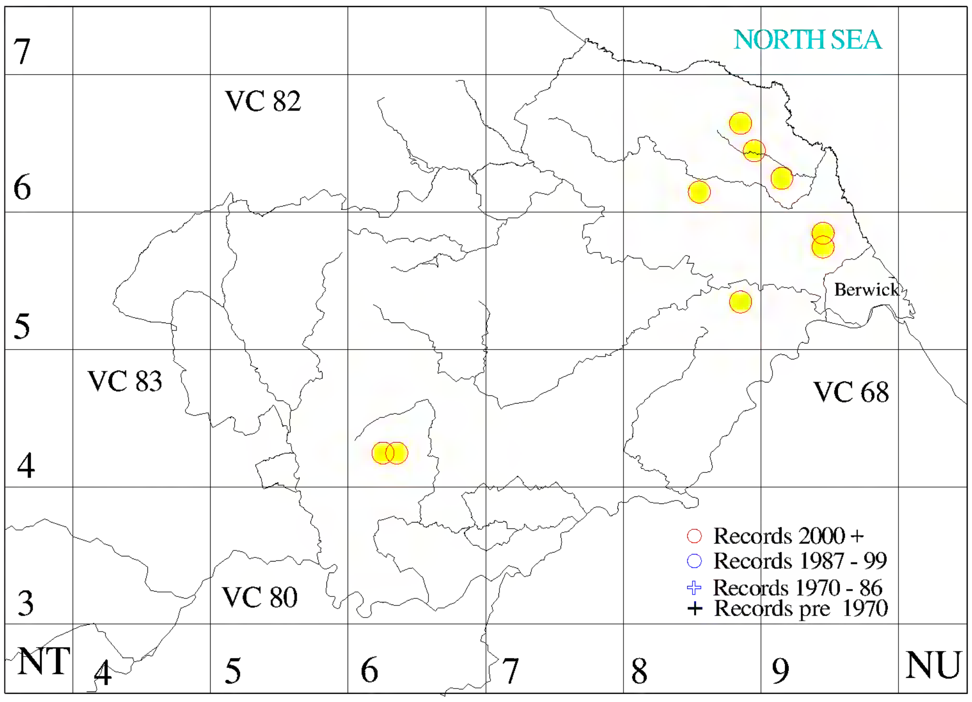
Filago vulgaris is a local plant of sandy grassland and more ruderal situations in quarries and railway yards that is most frequent in southeast England.

It has a similar Berwickshire distribution to *F. minima*, with which it sometimes grows, but is even scarcer. It occurs at Butchercote Craigs 63, Grantshouse Quarry 86, Lumsdaine Dean 86 and Old Cambus Quarry 87 and might well reappear on an eroding bank on the sea braes at Lansey Bank 87. The most secure of these small populations appears to be the one on rocky banks at Lumsdaine Dean.

Fumaria bastardii Tall Ramping-fumitory

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	0% monads	2% tetrads	22% hectads
Britain 1987-1999		2% tetrads	9% hectads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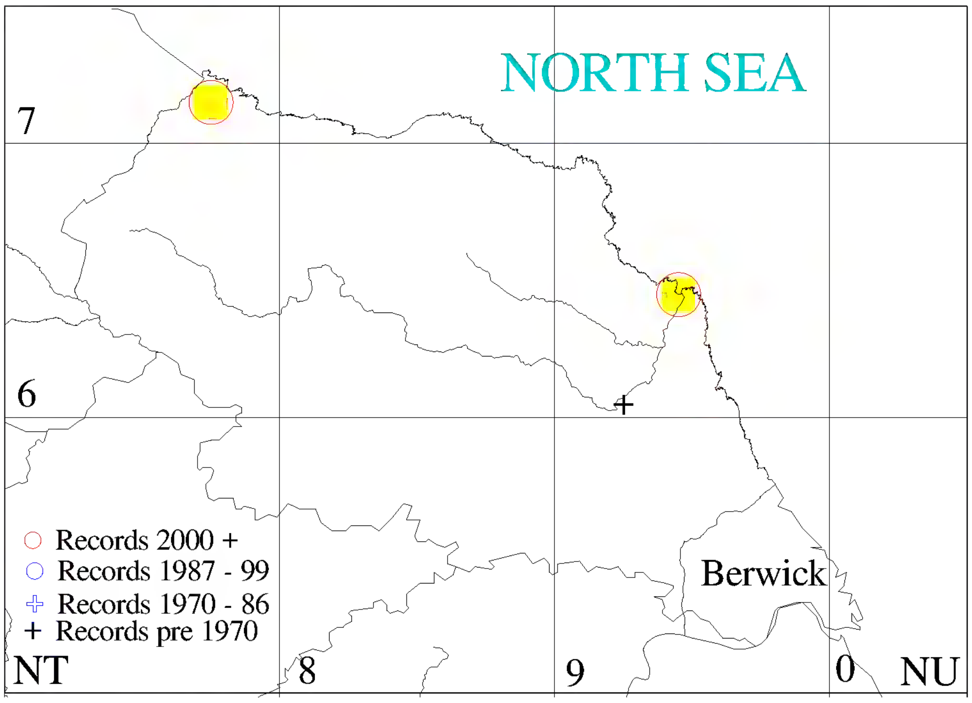
Fumaria bastardii is a local arable weed of the west coast of Britain which has an outlying population in the east, mainly in Northumberland and the Scottish Borders. Its distribution may not be fully recorded, as it is easily overlooked for other *Fumaria* species, especially *F. muralis subsp. boraei*.

It was not discovered in Berwickshire until 2001 but has since been found in scattered localities, mainly in the east but with an outlier near Gordon Moss 64.

Fumaria capreolata subsp. babingtonii White Ramping-fumitory

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		2% tetrads	10% hectads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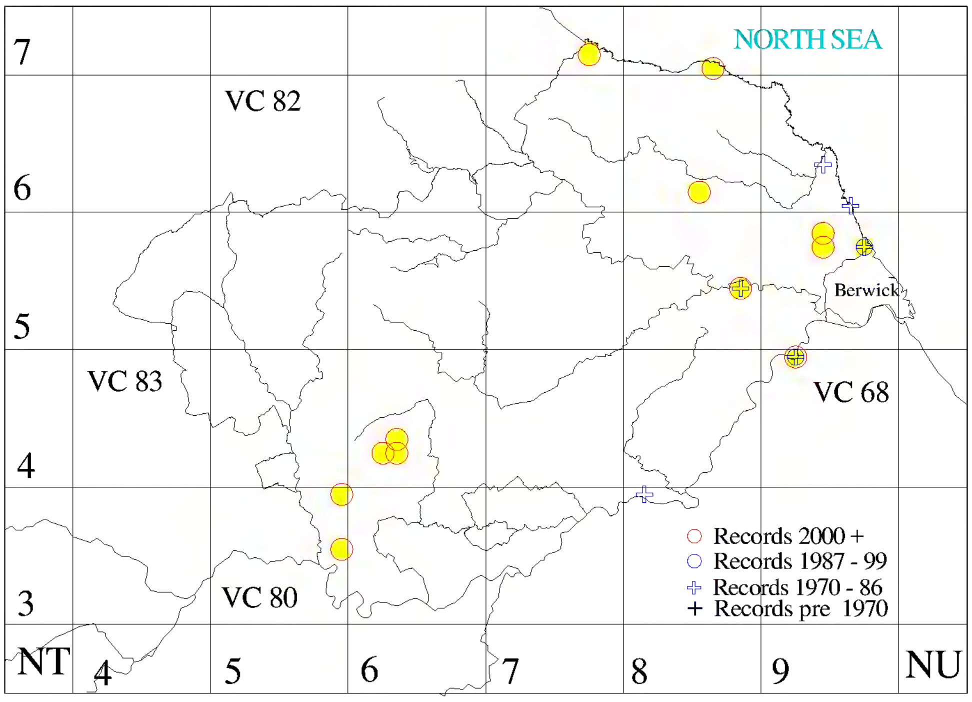
Fumaria capreolata subsp. babingtonii is a local but quite widespread British plant found mainly near the coast. Unlike other *Fumaria* species it grows mainly in scrubby places rather than arable land and has thus a better claim to be a native species at least in some parts of Britain.

It has only been recorded three times in Berwickshire, none of which has been from a natural habitat. An 1878 herbarium specimen survives from Ayton 96 and it has been collected recently at the foot of walls in Cockburnspath 77 and Eyemouth 96.

Fumaria densiflora Dense-flowered Fumitory

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	1% monads	3% tetrads	35% hectads
Britain 1987-1999		2% tetrads	5% hectads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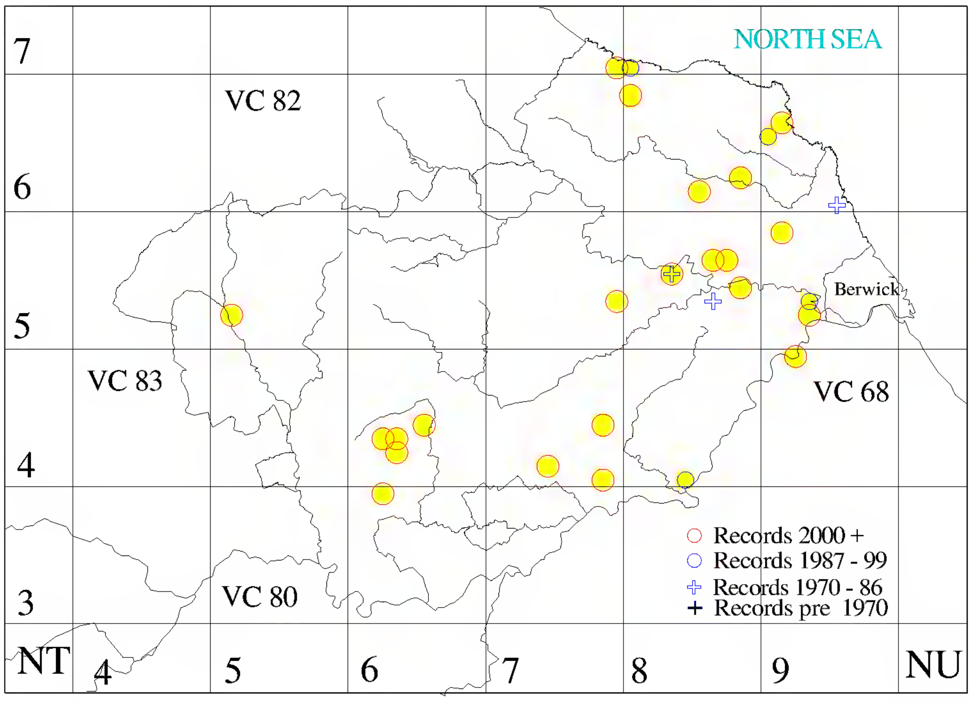
Fumaria densiflora has a curious British distribution being most frequent on the chalk of southern England in grassland and arable but it is also found near the east coast of Northumberland and Scotland where it is always an arable weed.

A number of small populations have recently been discovered in Berwickshire, mainly in the east. The fields by the Tweed below Fishwick Mains 94 are the most constant site and there is a cluster of records near Gordon Moss 64.

Fumaria officinalis subsp. wirtgenii Common Fumitory

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	2% monads	6% tetrads	57% hectads
Britain 1987-1999		5% tetrads	18% hectads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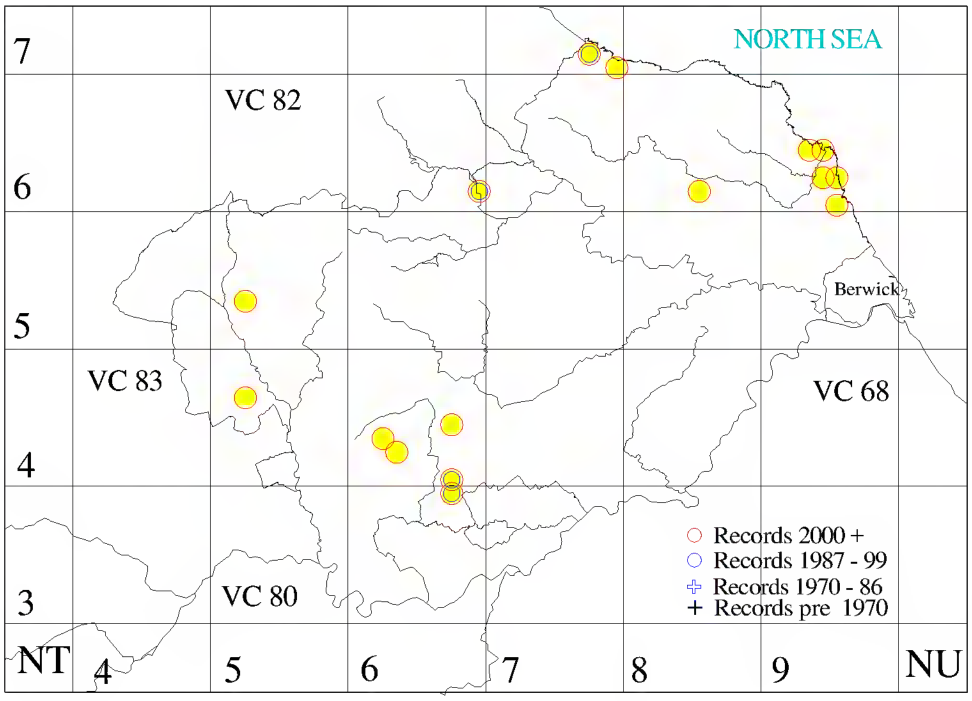
Fumaria officinalis subsp. wirtgenii is an arable weed that was not mapped separately from *subsp. officinalis* in the New Atlas but was mapped separately in the Critical Supplement to the Old Atlas when it was found to grow mostly on light soils in eastern Britain. The current map in the BSBI distribution database shows a patchy distribution suggesting that it has been ignored by many recorders.

Many Berwickshire records of this taxon have been made in recent years and it has been found to be distributed over most of the range of the species, but to be considerably less frequent than *subsp. officinalis* and with only a modest bias in favour of light soils.

Fumaria purpurea Purple Ramping-fumitory

Arable, archaeophyte, rare or scarce, British scarce

Berwickshire 1987-2013	1% monads	4% tetrads	35% hectads
Britain 1987-1999		0.4% tetrads	2% hectads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Fumaria purpurea is a nationally scarce endemic annual weed of cultivated or disturbed ground and hedge banks. It is most frequent in Cornwall, Lancashire, the Scottish Borders and Orkney.

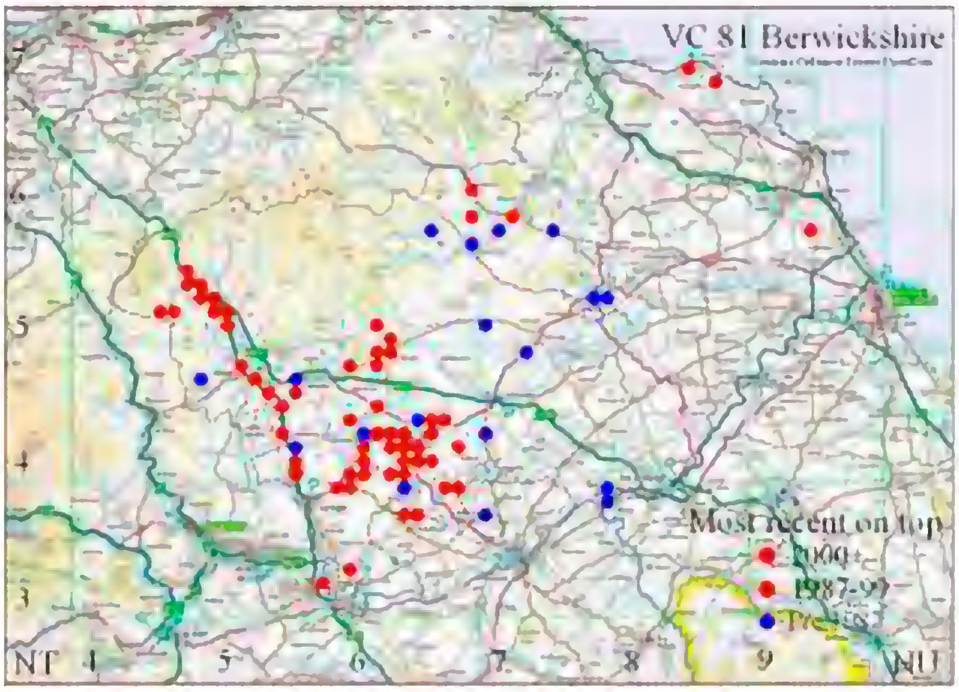
It has now been found quite widely in Berwickshire with groupings of the records evident around Gordon 64, Cockburnspath 77 and Eyemouth 96. It has generally been found in very small quantity but large populations were seen in an arable field near Lurgie Craigs 63, 64 in 1999 and in a hedge bank and adjacent arable field near Barefoots, Eyemouth 96 in 2000.

It is difficult to interpret the distribution. One possibility is that the species is a relatively recent introduction that is still increasing. Its habitats in Berwickshire suggest that it is not native there.

Galeopsis speciosa Large-flowered Hemp-nettle

Arable, archaeophyte, Berwickshire fine

Berwickshire 1987-2013	5% monads	11% tetrads	52% hectads
Britain 1987-1999		5% tetrads	14% hectads



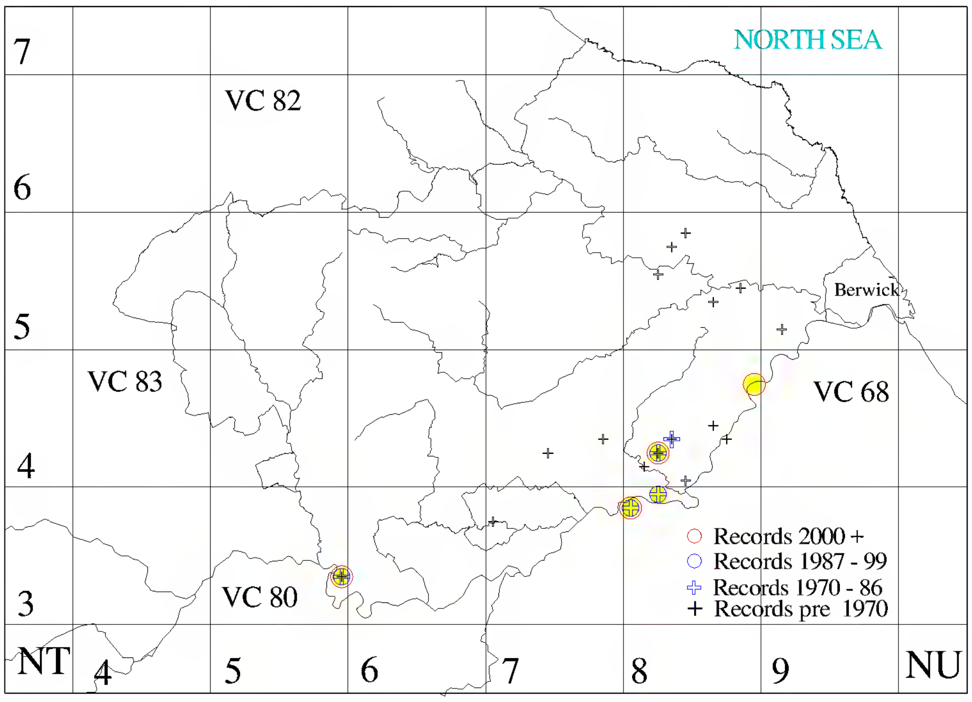
Galeopsis speciosa has a clustered distribution both in Britain as a whole and in Berwickshire. In the Gordon area 64 it is very frequent and sometimes spectacularly abundant in the peaty soils where it favours root crops and game strips. It is also widespread near the upper Leader Water, mainly in peaty soils. These are typically mixed farms where cultivation is alternated with periods under grass. Elsewhere in the county *G. speciosa* is a rarity.

This is a resilient species that continues to prosper, apparently without any special resistance to herbicides.

Galium boreale Northern Bedstraw

Rock, native, rare or scarce

Berwickshire 1987-2013	4¾ sites	2% tetrads	13% hectads
Britain 1987-1999		8% tetrads	13% hectads



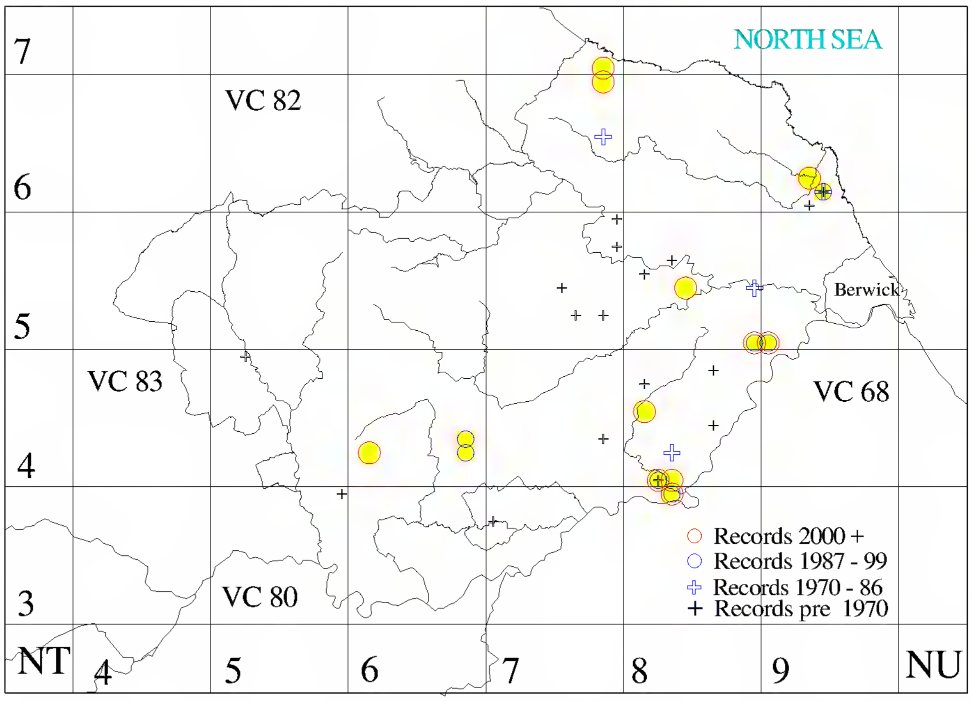
Galium boreale is quite widespread in northern England and Scotland by riversides and in montane flushes in calcareous conditions.

It was formerly better represented in Berwickshire than its national distribution would predict. Indeed it was still widespread in the Merse in the early C19 as a relict of earlier botanical riches at a time when there was much wetland there, but these gradually died out as a delayed consequence of its conversion to productive arable land and there is now only a single locality away from the River Tweed, on a wet ditch bank near Hirsel Law 84. It grows by the Tweed on rocks at Gaitheugh 53, on a limestone outcrop opposite Carham 83 and in a cleft in a sandstone rock near the river at Blount Bank 84. It may still survive on a river retaining wall at Fireburnmill 83 where access has become difficult due to the spread of scrub.

Galium mollugo (G. album) Hedge Bedstraw

Grassland, native, rare or scarce

Berwickshire 1987-2013	7+3 sites	3% tetrads	35% hectads
Britain 1987-1999		31% tetrads	49% hectads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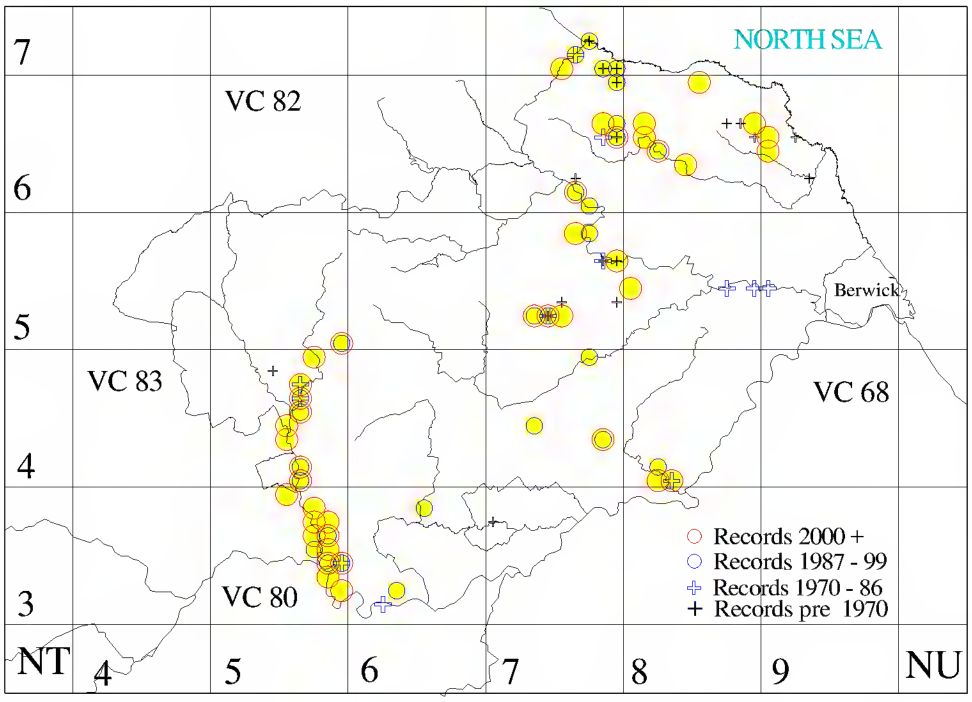
Galium mollugo is very widespread in much of England but local and possibly introduced in Scotland. It grows in calcareous grassland and at the woodland edge.

The historical record suggests that this species is native in Berwickshire and has declined sharply but some of the records may relate to introductions, perhaps with grass seed. Such material as has been critically examined relates to *subsp. erectum.* It is present in several places at The Hirsel 83, 84 but has been largely eliminated from the sides of the drive in recent years. It is plentiful on the disused Winfield Airfield 85, 95 where it may or may not be native. There is a small colony on the Coldstream road south of Swintonhill 84, another by the old drive to Blackadder House 85 and another near the Kip Rock on a bank above the Eye Water 96. It has recently been sown in quantity by the Cockburnspath bypass 76, 77 on the A1 trunk road and is now well naturalised there. The other recent records are casual occurrences.

Galium odoratum Woodruff

Woodland, native, other axiophyte

Berwickshire 1987-2013	5% monads	11% tetrads	52% hectads
Britain 1987-1999		20% tetrads	49% hectads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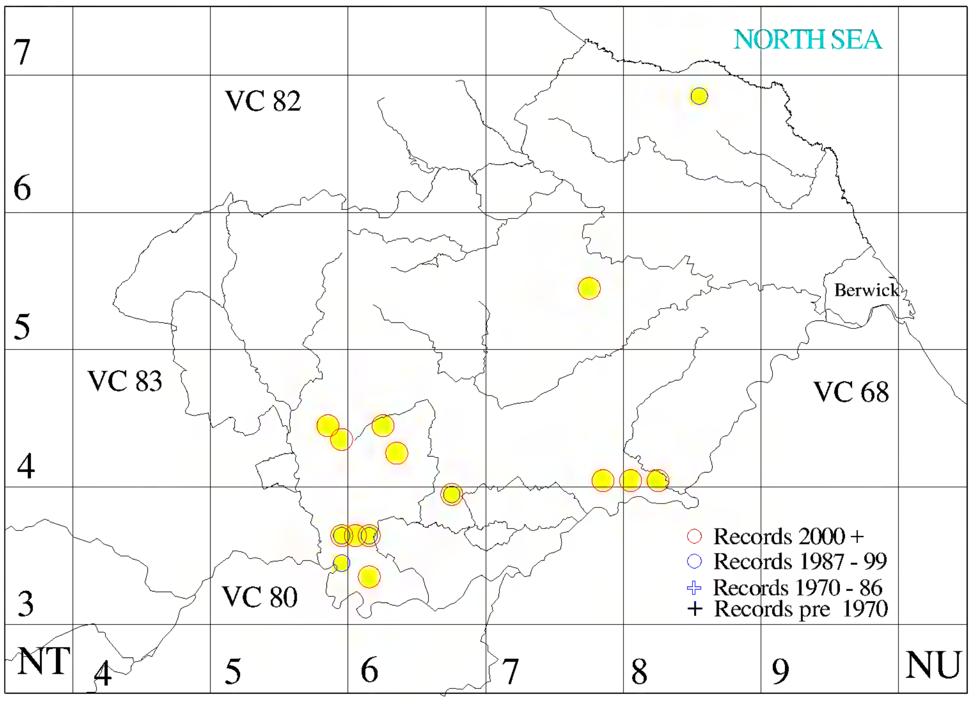
Galium odoratum is widespread but rather local across much of Britain. It is a patch-forming herb of woodland on base-rich soils. Its Berwickshire distribution is difficult to explain. It is widespread along the Leader Water but is only found in the upper sections of the Whiteadder, Eye and Ale Waters. The failure to refind the plant in the lower Whiteadder and along the Pease Burn is surprising. It has probably been introduced at Anton's Hill 74 and at Bridgehaugh Mill 54 where it is present as a robust hortal variety.

This is a plant with low colonising ability. Its trends are uncertain as it is thought that some of the apparent losses may yet be refound.

Galium palustre subsp. elongatum Great Marsh-bedstraw

Wetland, native, rare or scarce

Berwickshire 1987-2013	14 sites	4% tetrads	35% hectads
Britain 1987-1999		6% tetrads	25% hectads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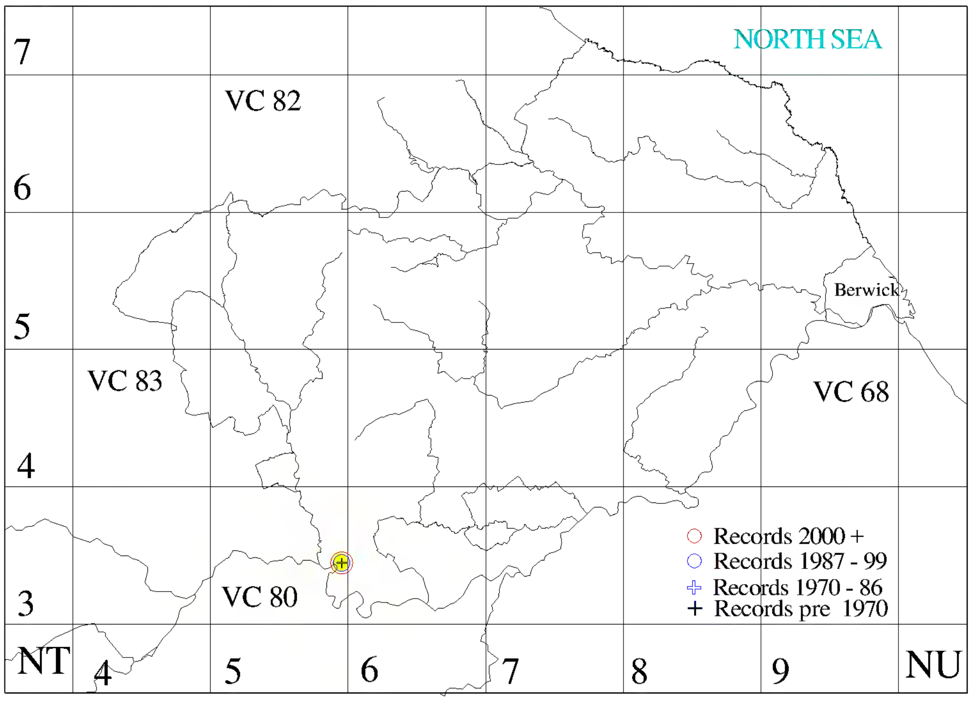
Galium palustre is found in a wide variety of wetland habitats throughout Britain. *Subsp. elongatum* favours fen rather than marsh but its detailed distribution is still largely unknown as it is patchily recorded.

In Berwickshire this taxon is distinct from *subsp. palustre* and is restricted to a characteristic fen habitat where *subsp. palustre* is usually also present, but at the margins rather than in the wetter parts of the fen. *Subsp elongatum* is known at Redpath Moss 53, Pickie Moss 54, Bemersyde Moss 63, Everett Moss 64, Gordon Moss 64, Bishop's Bog 74, the Hen Poo at Duns Castle 75, Hirsel Lake 84 and at Long Moss 96.

Galium sterneri Limestone Bedstraw

Rock, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		1% tetrads	7% hectads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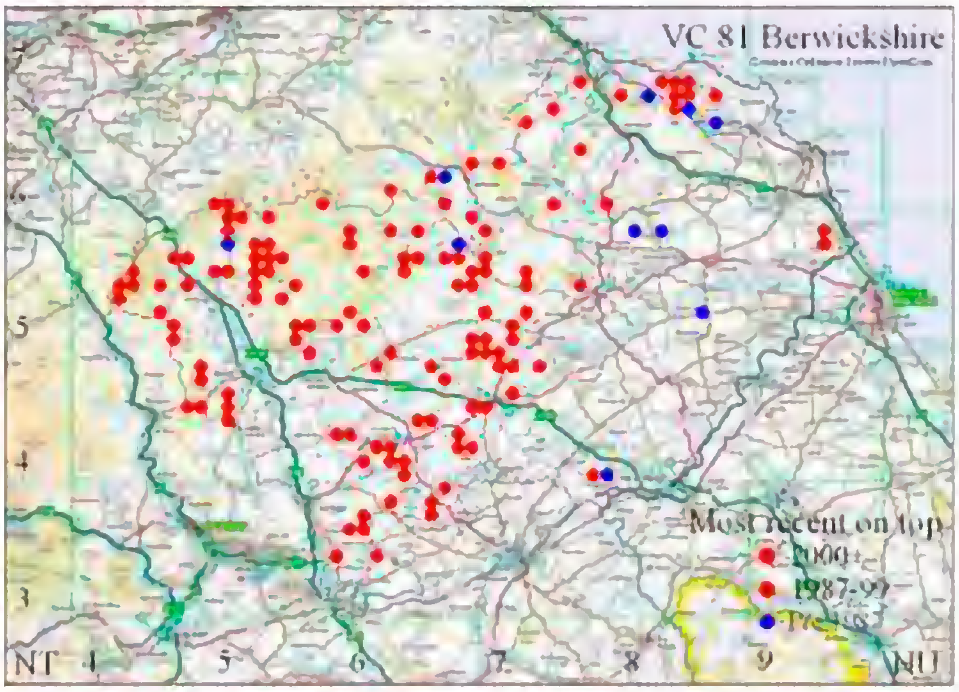
Galium sterneri is a local plant of rocky calcareous grassland in upland areas of northern England and parts of Scotland.

Only one tiny colony is known in Berwickshire, though it is much more frequent in Roxburghshire. It grows on rocks near the Tweed at Gaitheugh 53.

Galium uliginosum Fen Bedstraw

Wetland, native, other axiophyte

Berwickshire 1987-2013	11% monads	28% tetrads	65% hectads
Britain 1987-1999		26% tetrads	35% hectads



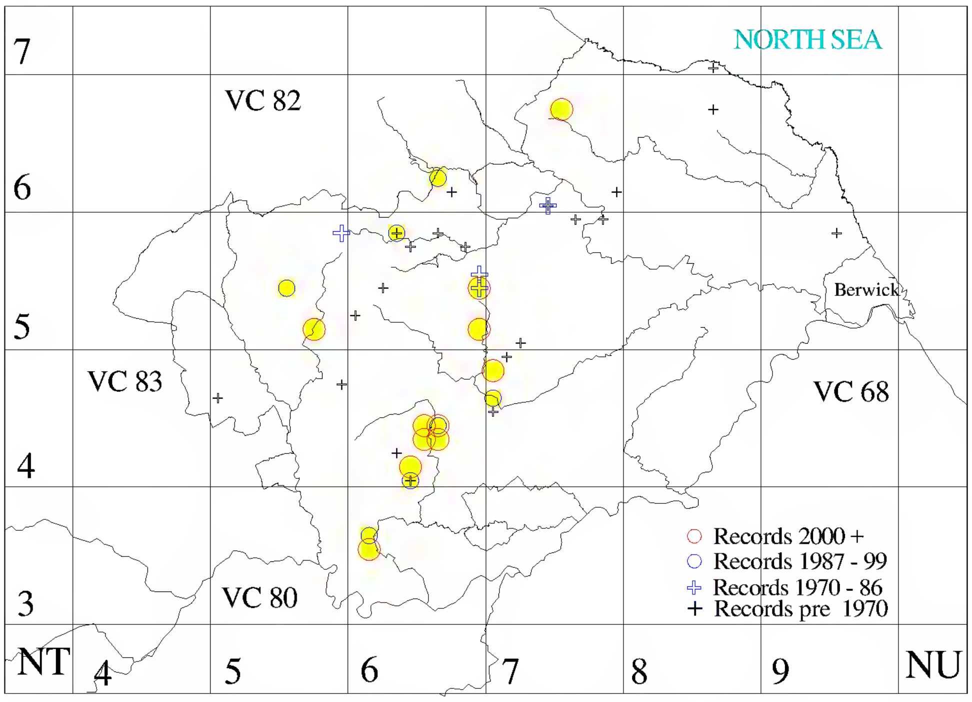
Galium uliginosum is a somewhat local plant found over much of Britain and favouring shallow fen habitats on base-rich soils. It is notably widespread and frequent over the whole of upland Berwickshire. In the fens it is less plentiful than *G. palustre subsp. palustre* Common Marsh-bedstraw and more confined to the edges of the wetland, while *Galium palustre subsp. elongatum* Great Marsh-bedstraw may grow nearby in the wettest parts. In open moorland *G. uliginosum* is found in flushes with a wide variety of soil reaction. Many surprisingly acidic *Juncus articulatus* Jointed Rush flushes are colonised, even in very species-poor monads high in the Lammermuirs.

G. uliginosum is now better recorded by the sample surveys and the historical record is quite inadequate to assess trends.

Genista anglica Petty Whin

Moorland, native, rare or scarce

Berwickshire 1987-2013	9½ sites	4% tetrads	30% hectads
Britain 1987-1999		4% tetrads	14% hectads



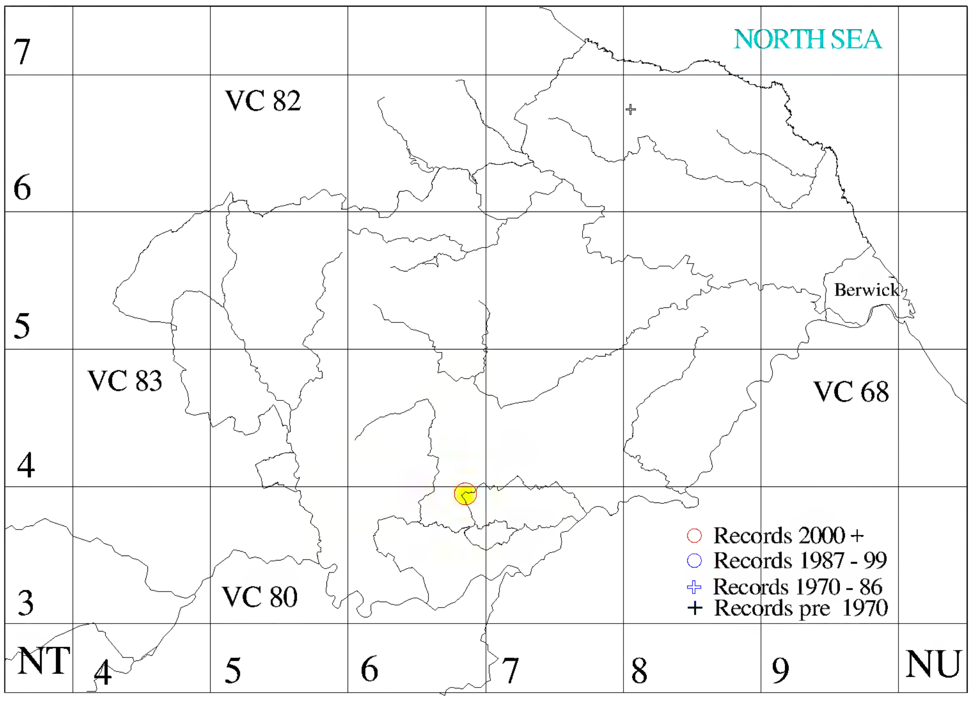
Genista anglica is a plant of damp heathy grassland and open moorland. It remains widespread in Wales and northeast Scotland but is very local and declining elsewhere.

It is now very poorly represented in Berwickshire following losses that are partly due to more intensive muirburn. Most of the remaining colonies have become small and vulnerable. That at Gordon Community Woodland 64 has prospered in *Calluna* Heather following the cessation of grazing for the tree planting but may soon be lost to shade and coarser vegetation unless the trees are thinned and some grazing is re-instated in the new woodland. Moderately good colonies survive near a small moss on Brotherstone Hill 63 and at Bog Park near the Greenlaw Kaims 65 with *Erica tetralix* Cross-leaved Heath. The *Genista* was quite plentiful on Dirrington Law 75 in 1985, but is now very scarce there following the increased intensity of muirburn.

Geranium columbinum Long-stalked Crane's-bill

Grassland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		5% tetrads	20% hectads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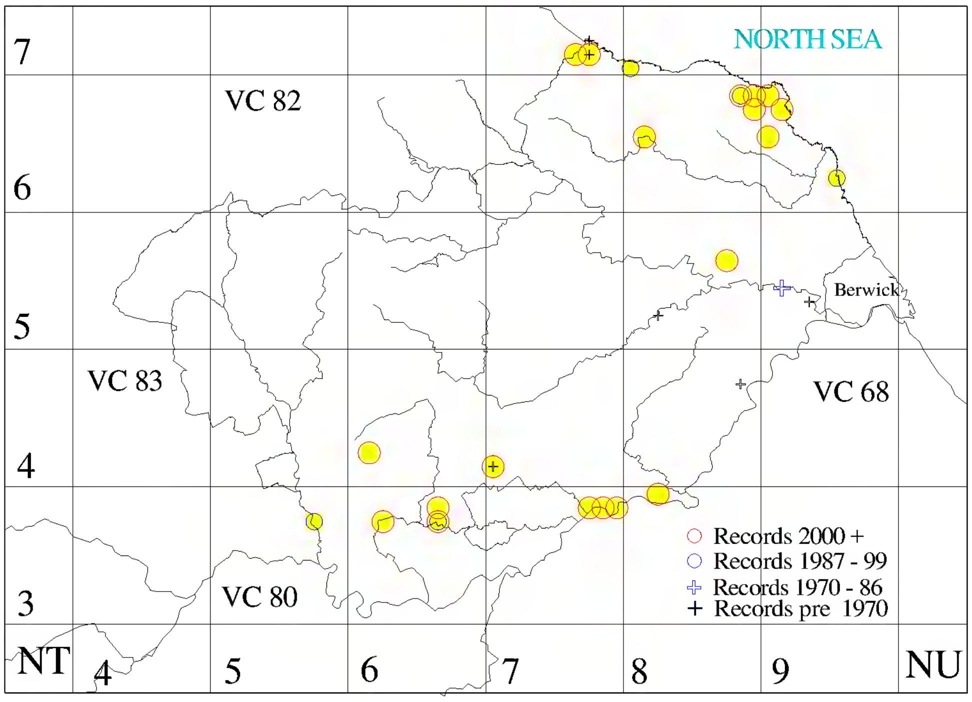
Geranium columbinum is mainly found in dry grassland in south-west Britain.

There are only two Berwickshire records, one from a field near Penmanshiel 86 in 1839 which is presumed extinct and one from Hareheugh Craigs 63 in 2008 where there is a small colony on the species-rich slopes. It is, or was, known nearby at Smailholm Craigs in Roxburghshire NT63 at a site that has recently been much overrun by whins.

Geranium pusillum Small-flowered Crane's-bill

Grassland, native, rare or scarce

Berwickshire 1987-2013	19½ sites	5% tetrads	48% hectads
Britain 1987-1999		17% tetrads	32% hectads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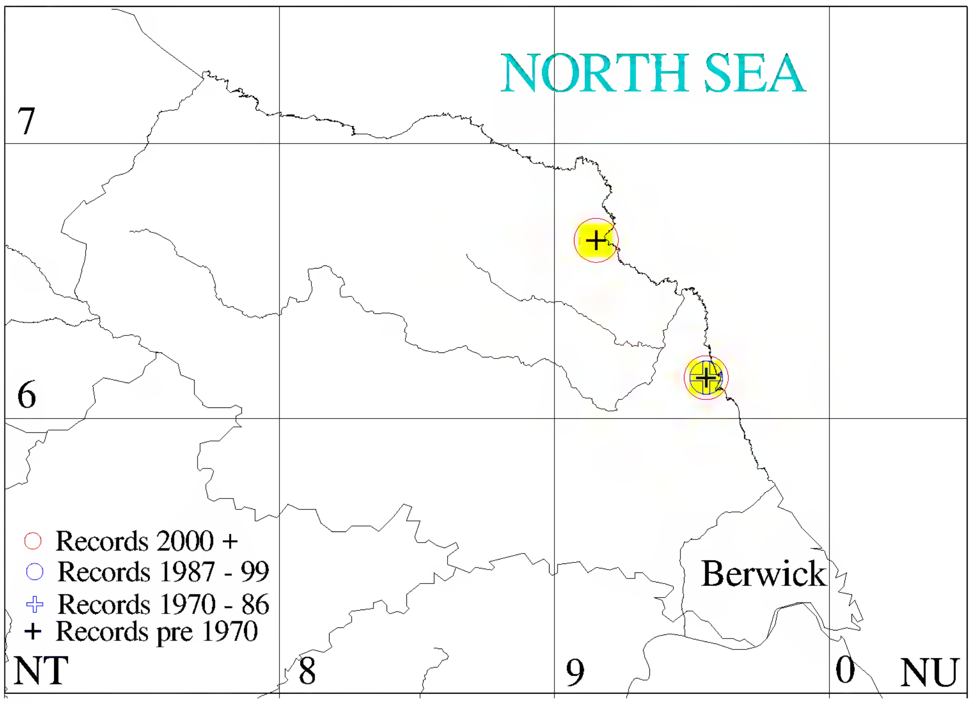
Geranium pusillum grows mainly in eastern Britain and is much more widespread in England than Scotland. Its habitat is dry grassland and rocky places.

In Berwickshire *G. pusillum* occurs mainly on the lavas of the Kelso traps and in fields near the coast where it favours eroding rocky knowes. Typical sites are near Girrick 63 and at Muckle Tharirn 63, around Westerside 86, at Ramsheugh Bay 77 and at St Abbs village 96. Most of the fields are treated with fertiliser and this species and other scarce annuals have been much reduced. Although many additional sites have been discovered in recent years, the future of this species in the county is far from assured.

Geranium sanguineum Bloody Crane's-bill

Coast, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	4% hectads
Britain 1987-1999		3% tetrads	13% hectads



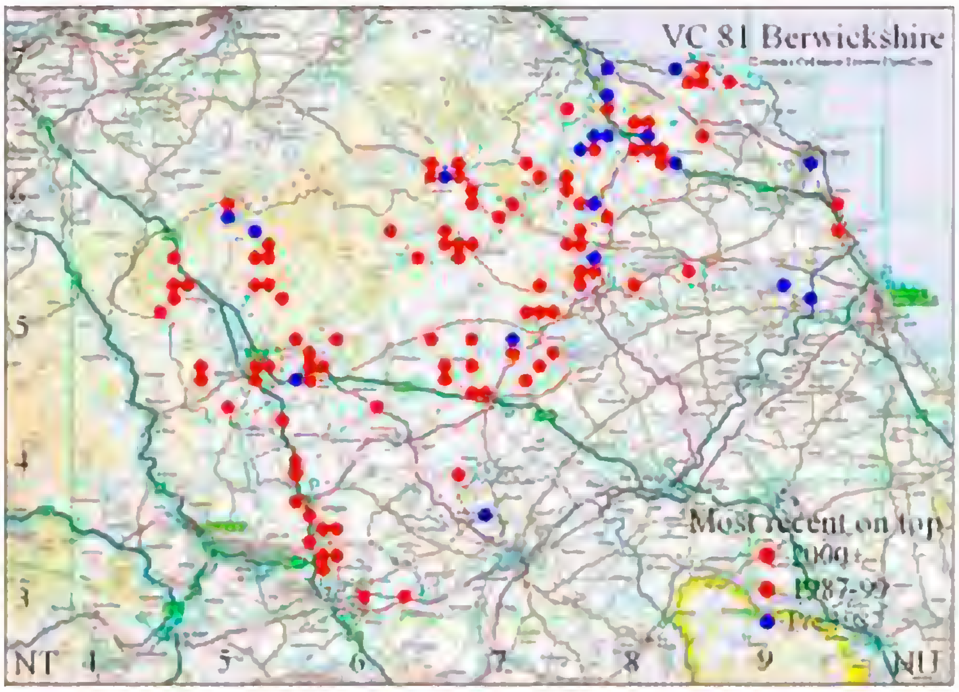
Geranium sanguineum is patchily distributed in Britain. It is mainly coastal in sandy grassland but there are some inland populations on calcareous rocks. It is also quite frequent as an introduction.

Although there are some fine colonies on the coast of North Northumberland not far south of Berwick upon Tweed, it is known in just two sites in Berwickshire. There is a colony on an eroding section of the sea braes north of Burnmouth 96 and a small one on sand at Coldingham Bay 96.

Geranium sylvaticum Wood Crane's-bill

Woodland, native, selected axiophyte

Berwickshire 1987-2013	8% monads	24% tetrads	78% hectads
Britain 1987-1999		11% tetrads	19% hectads



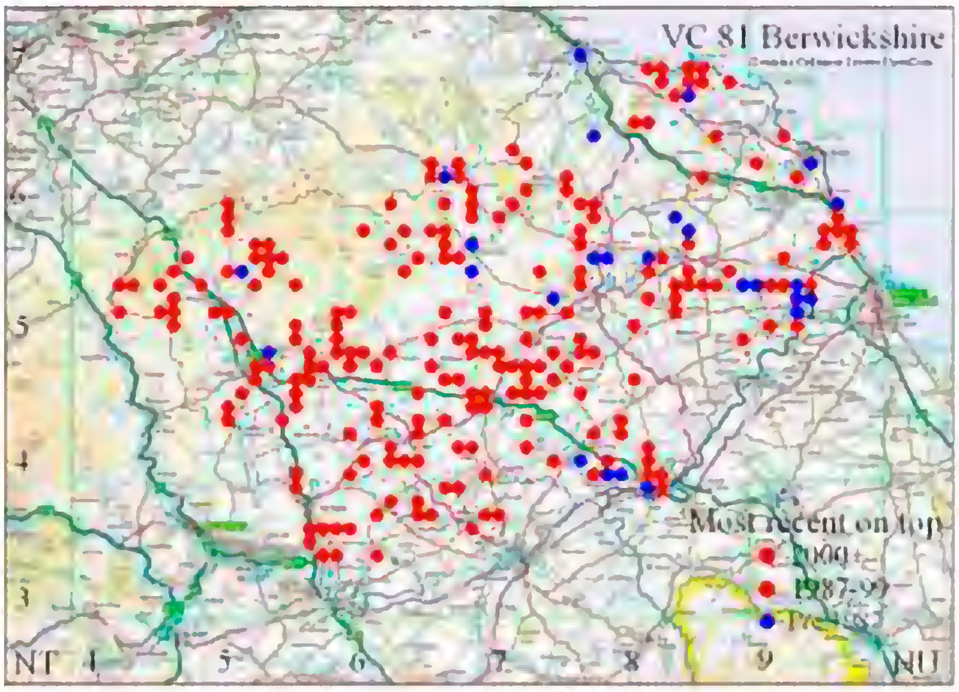
Geranium sylvaticum is widespread within its distinctive range from northern England north to the Great Glen in Scotland. It is a woodland-edge plant most typically found near the river or burn below upland woodland wherever base-rich soils occur. Following habitat fragmentation most of the populations are now in less-favourable habitat such as roadsides. It also occurs on montane rock ledges. The Berwickshire distribution gives a good indication of where species-rich upland woodland was found in the past. Many of the populations of *G. sylvaticum* are small and there are few good colonies in typical habitat. *Var wanneri*, with pale flowers veined deep pink, was at Gaitheugh 53 in 2001. A white-flowered form has been found in the past, but not recently.

This species appears to have only limited colonising ability. Few losses are evident at 1km scale but a continuing decline is suspected at finer scales.

Geum rivale Water Avens

Wetland, native, other axiophyte

Berwickshire 1987-2013	19% monads	46% tetrads	87% hectads
Britain 1987-1999		26% tetrads	49% hectads



Geum rivale is very widespread in northern Britain. In Berwickshire, as elsewhere, it grows in wet ground at the woodland edge, in moorland flushes and in wet meadows and road verges and prefers at least slightly base-rich soils, where it is often associated with *Geranium sylvaticum* Wood Crane's-bill, but it is much more widely distributed than that species. It is always an indicator of natural communities even though its habitats are often much modified. It is less confined to the river corridors than might be expected, despite the vegetation history of the area.

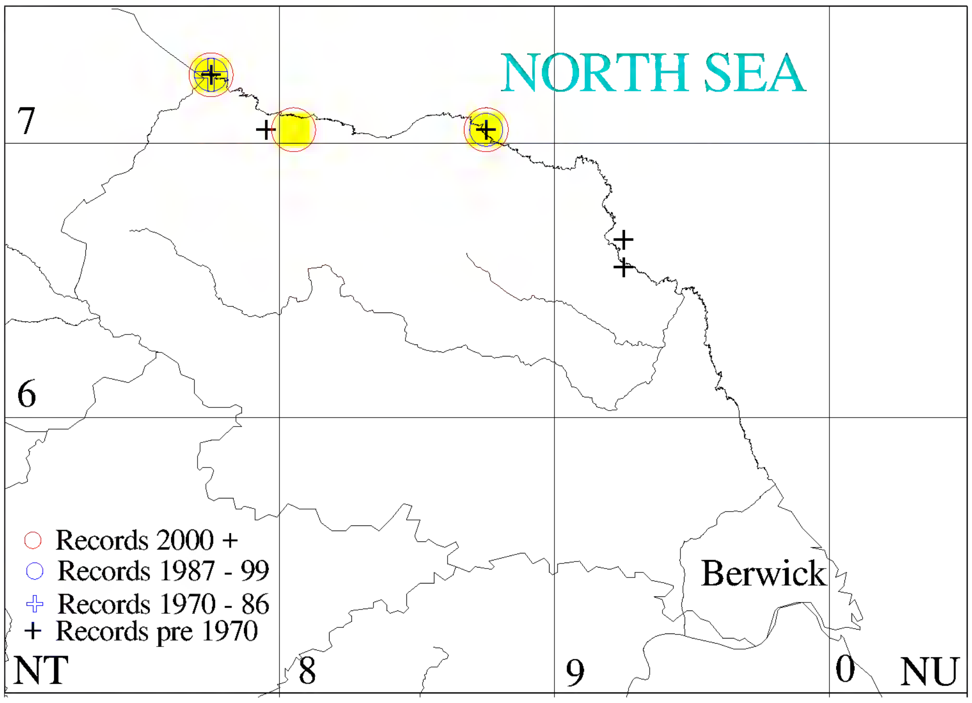
G. rivale hybidises with *G. urbanum* Wood Avens; the hybrid *G. x intermedium* is known from 31 monads. A colony of *G. rivale* is known near Dowlaw 87 which lacks anthocyanin and has pale stems and sepals and no hint of red in the petals.

G. rivale produces seed freely and is capable of colonising, but in practice it has no opportunity to do so except at very fine spatial scales. It is too widespread to show evidence of change at 1km scale.

Glaucium flavum Yellow Horned-poppy

Coast, native, rare or scarce

Berwickshire 1987-2013	2½ sites	0.9% tetrads	9% hectads
Britain 1987-1999		1% tetrads	7% hectads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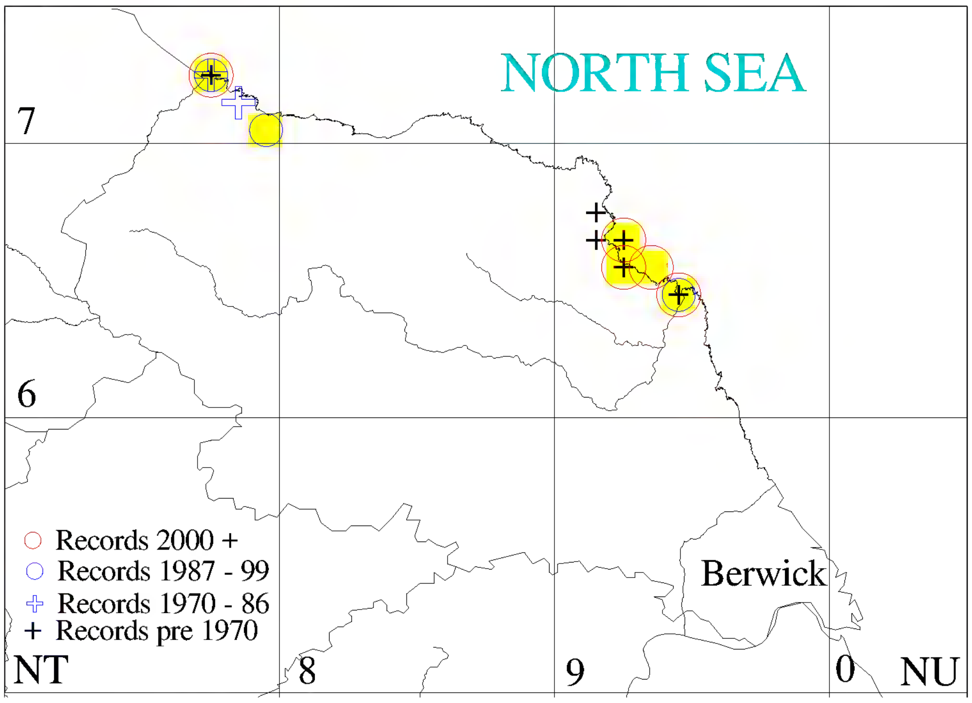
Glaucium flavum is quite widely distributed on sand and gravel on beaches. on the coast of southern and southwestern Britain, with just a few outlying stations in the north.

The best Berwickshire colony is on shingle at Ramsheugh bay 77 where numbers vary from year to year. About 1,000 plants were seen in 2009, many of them young rosettes of which only a modest proportion could be expected to mature. There is a very large colony of *Centranthus ruber* Red Valerian nearby which threatens to overwhelm the *Glaucium.* There is a further colony on sand and shingle at Brander Heugh 86 where about 60 juveniles were seen with two mature plants in 2012. Between these two stations two plants were seen on shingle below St Helen's Church 87 in 2008.

Glaux maritima Sea-milkwort

Coast, native, rare or scarce

Berwickshire 1987-2013	4½ sites	2% tetrads	9% hectads
Britain 1987-1999		7% tetrads	28% hectads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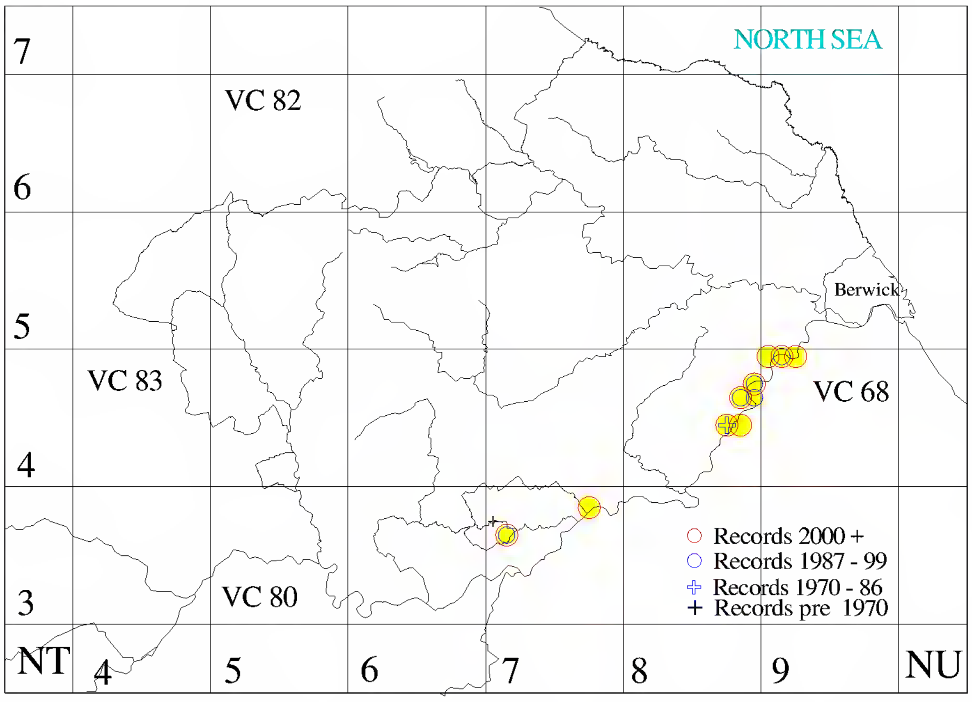
Glaux maritima is found all round the British coast in a variety of habitats including saltmarsh and damp sand.

The Berwickshire colonies are all small with the best around Yellow Craig 96. *Glaux* is also found at Hairy Ness by Eyemouth Fort 96 and at Ramsheugh Bay 77.

Glyceria maxima Reed Sweet-grass

Riverside, neophyte, intrusive neophyte

Berwickshire 1987-2013	0.9% monads	2% tetrads	13% hectads
Britain 1987-1999		18% tetrads	42% hectads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✣ Records 1970 - 86
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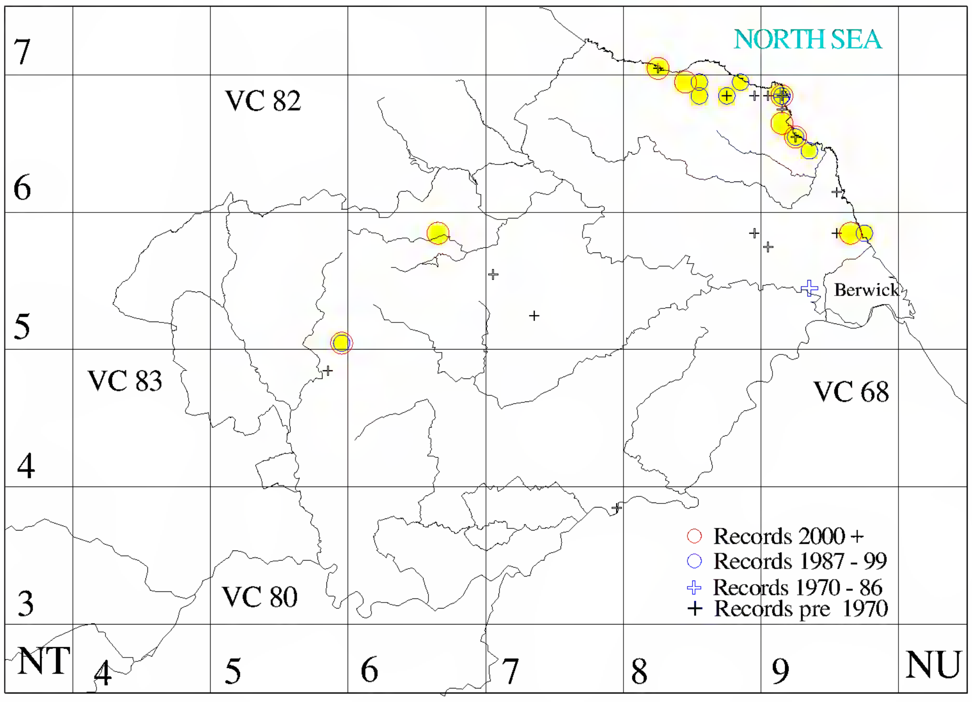
Glyceria maxima is a problematic species, first found by George Bolam and Francis Norman by the Tweed south of Gainslaw, North Northumberland NT95 on 26 July 1904 when they came across 'one or two plants only'. It is unknown whether this species, which is native further south in England, was introduced naturally by wildfowl or whether the seed was carried downstream from a deliberate planting, such as that suspected at a pond at Newton Don 63 where it was first recorded in 1938 and is now dominant. It is only in the last 30 years that the species has really multiplied by the lower Tweed, very possibly in response to the increased nutrient levels in the river and it now forms dense swards at the water's edge to the detriment of a number of native riparian species. But any problems are, as yet, quite localised.

Gymnadenia conopsea (G. conopsea agg.) Fragrant Orchid

Grassland, native, rare or scarce

Berwickshire 1987-2013	6 sites	2% tetrads	26% hectads
Britain 1987-1999		8% tetrads	28% hectads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Gymnadenia conopsea is widespread in Britain but rather localised favouring areas with base-rich rocks where it grows in damp base-rich grassland.

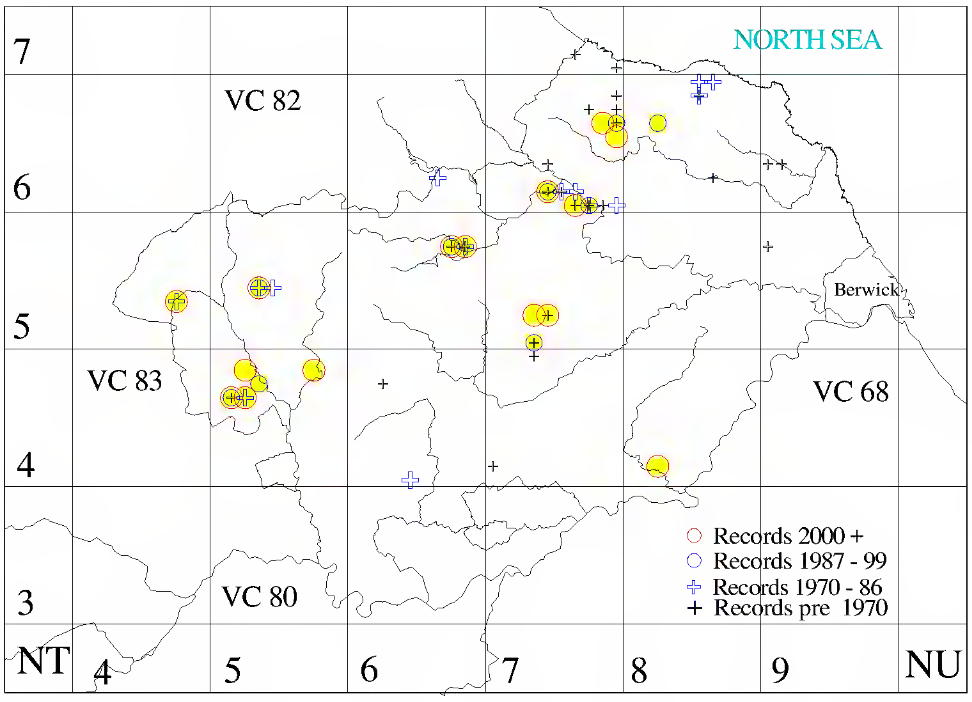
In Berwickshire there is a small colony at Cromwells 55 and a better one on the sea braes near Redheugh 87 where 20 flowering spikes were seen in 2012. A few scattered plants are still sometimes found in fields near Dowlaw Moss 86. Small colonies at survive at Coldingham Bay 96, Fleurs Dean 96 and Killiedraught Bay 96. It was last seen at St Abbs Head 96 in 1995 when six flowering spikes were seen at Wuddy Heugh. 100 flowering spikes were found below Lamberton 95 in 2014. Most or all of these populations are of *subsp. borealis*. There are two historical records of *subsp densiflora*: from Dods Mill 54 and Fleurs Dean 96.

This is a species that has lost most of its inland sites some time ago and which is now losing its coastal sites at an alarming rate.

Gymnocarpium dryopteris Oak Fern

Rock, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	35% hectads
Britain 1987-1999		12% tetrads	22% hectads



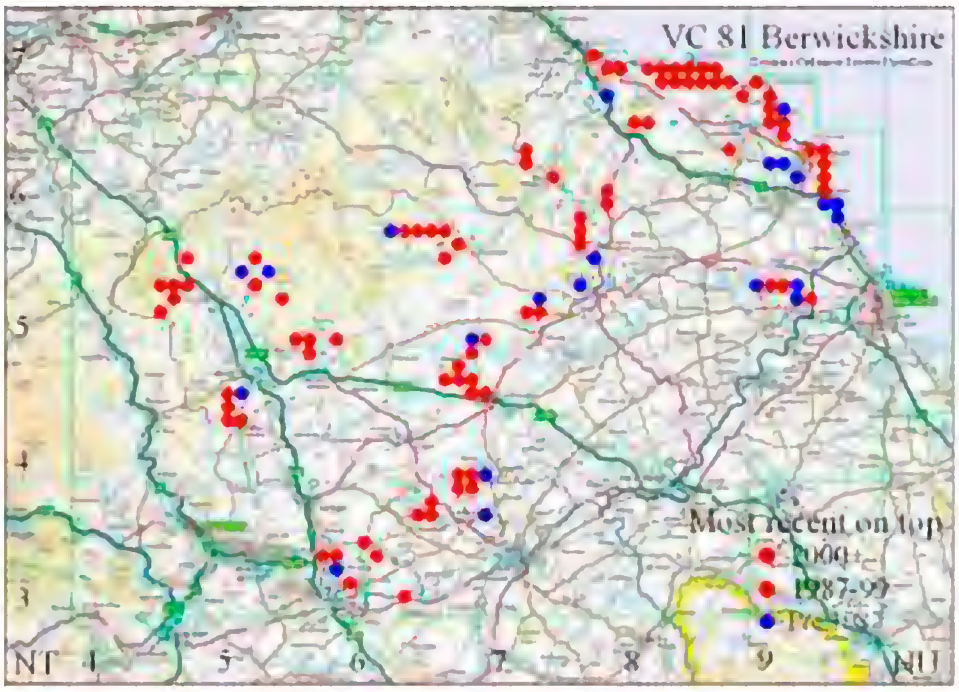
Gymnocarpium dryopteris is a fairly widespread hill plant in Britain found along rocky burnsides in woodland and in open upland screes. It can tolerate quite acidic conditions. There are only a few Berwickshire colonies on rocky slopes in woodland, as at Langtonlees Cleugh 75 and near Abbey St Bathans at Wild Wood 76 and Ellerburn Wood 76. There are rather more colonies in screes up the hill burns towards the west of the county. More surprising are a few records of clumps in open woodland as at Bonaparte's Plantation near Mellerstain 64, in the Hirsel Woods 84 and in birch at Long Moss on Coldingham Common 86. All these are in moorland or former moorland but it is quite unclear how long the fern has been present as only one of these colonies has been recorded recently and that was at a site where it had not been discovered before.

While most of the colonies appear long-established there may be a cycle of short-term colonisation of marginal habitat, particularly in open woodland. Some decline is indicated by the historical record, but little of it may be recent.

Helianthemum nummularium Common Rockrose

Grassland, native, Berwickshire fine

Berwickshire 1987-2013	7% monads	18% tetrads	65% hectads
Britain 1987-1999		9% tetrads	27% hectads



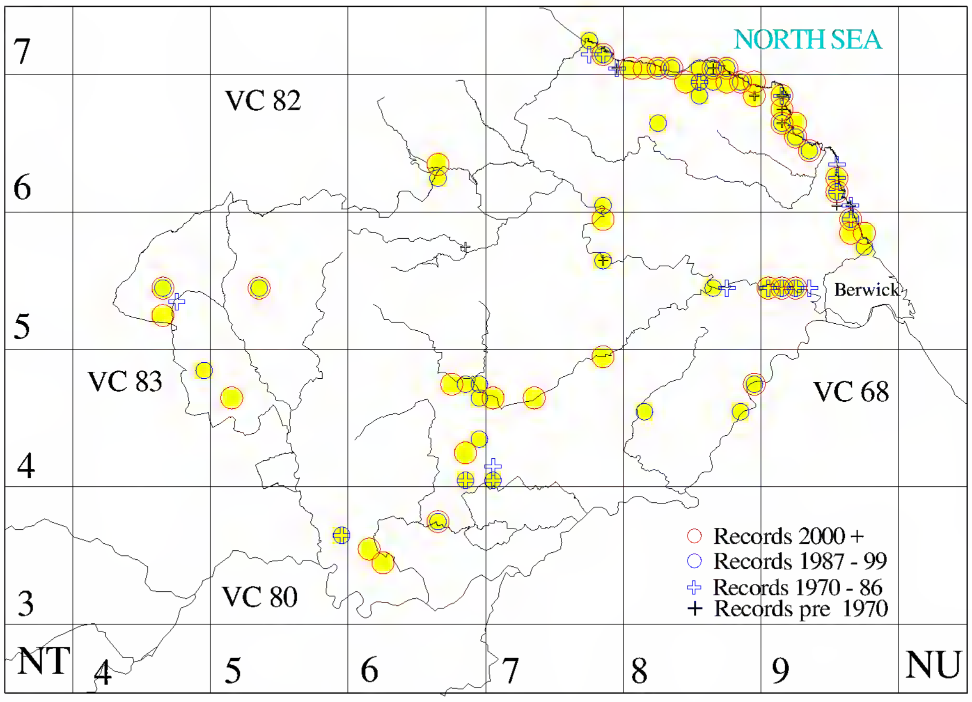
Helianthemum nummularium is a dwarf shrub of dry rocky calcareous grassland widespread in Britain where suitable rocks occur. The fine Berwickshire population extends to less calcareous rocks than the norm and is found where there are base-enriched strata in Silurian rocks near the Dye Water 65 and some of the Lammermuir burns 45, 55 as well as on the Old Red Sandstone in Greenlaw Dean 64 and the intrusive rocks of the Kelso Traps at Hareheugh Craigs 64. This species is also very frequent along the coast on equally varied geology with fine colonies at St Abbs Head 96. A normal colony near Partanhall 96 had one plant with pink flowers, presumably a hybrid with a garden variety grown nearby. Some of the colonies are at the moorland edge where they are associated with *Erica cinerea* Bell Heather.

All the colonies appear to be long-established. There may well be some turnover of individual plants within a population but this is not evident. Scrub invasion has led to a few losses, but populations often survive on craigs within scrub or woodland.

Helictotrichon pratense (Avenula pratensis) Meadow Oat-grass

Grassland, native, other axiophyte

Berwickshire 1987-2013	5% monads	13% tetrads	78% hectads
Britain 1987-1999		8% tetrads	25% hectads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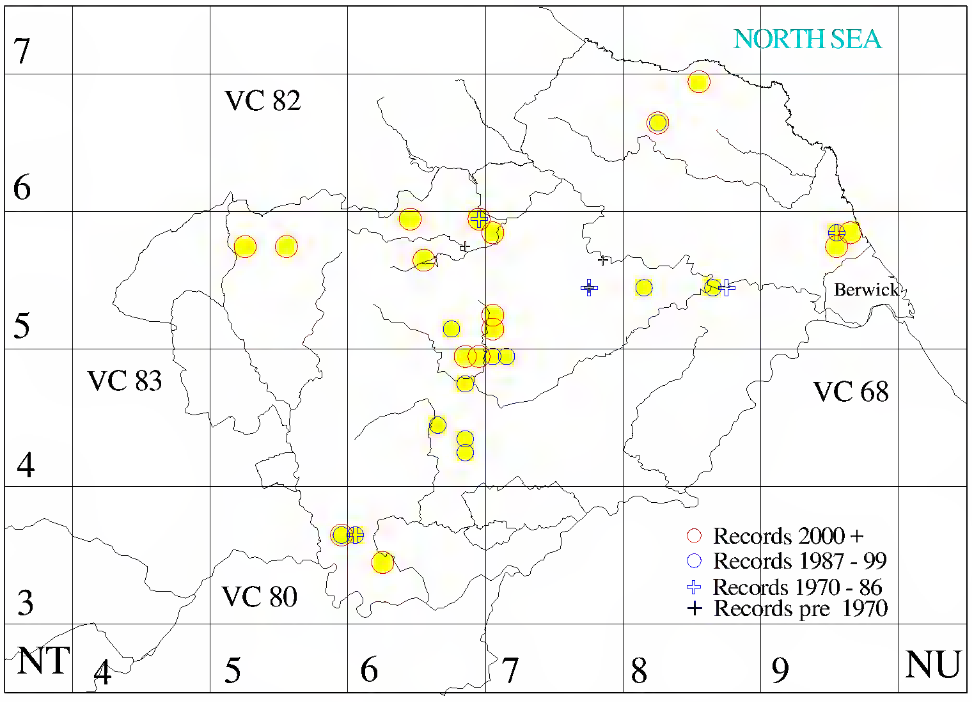
Helictotrichon pratense is a grass that is widespread in Britain where there are calcareous soils. In Berwickshire it is very widespread on the coast on rocky knowes and unstable slopes on a variety of geological formations, often associated with *Koeleria macrantha* Crested Hair-grass. Inland it is scarce and sparse, being much less frequent than *Helianthemum nummularium* Rockrose perhaps because it requires more active erosion to generate a suitable micro-habitat and is thus absent from the harder rocks.

The miss-match between the inland localities recorded at different periods reflects the difficulty of recording small populations rather than any cycle of losses and colonisation.

Helictotrichon pubescens (Avenula pubescens) Downy Oat-grass

Grassland, native, other axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	43% hectads
Britain 1987-1999		15% tetrads	42% hectads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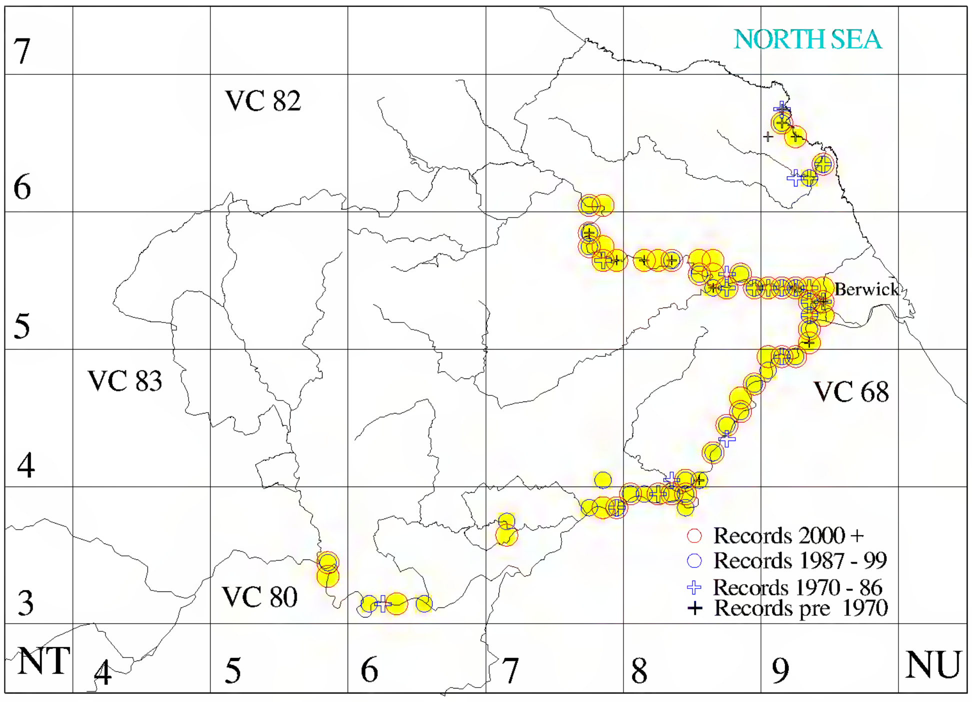
Helictotrichon pubescens is quite a widespread grass in Britain and is found in slightly damp soils with at least a trace of base-enrichment that are free from eutrophication. In Berwickshire it is very local and sparse, being found in upland situations from Lamberton Moor 95 in the east, along the upper Blackadder Water and the Fangrist Burn as well by a few of the Lammermuir burns. It is absent from the sea braes.

The miss-match between the localities recorded at different periods is thought to reflect the difficulty of recording small populations rather than any cycle of losses and colonisation. There are likely to have been some losses to forestry, though there is no direct evidence for this.

Heracleum mantegazzianum Giant Hogweed

Riverside, neophyte, intrusive neophyte

Berwickshire 1987-2013	5% monads	12% tetrads	52% hectads
Britain 1987-1999		7% tetrads	28% hectads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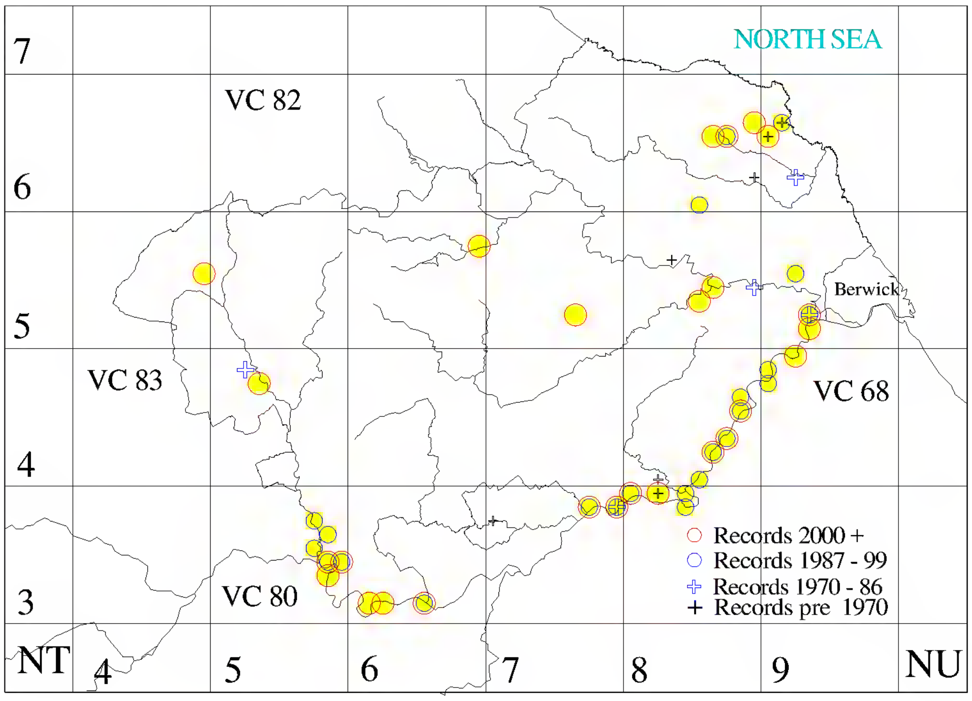
Heracleum mantegazzianum is widely naturalised in Britain, especially in the east. It prefers damp fertile soils and spreads prolifically down rivers, colonising the flood plain where not controlled. Its abundance by the River Tweed and its tributaries became an embarrassment to the fishing interests and there was a strong lobby for its systematic control. Since 2003 large sums have been expended annually by Tweed Forum in an attempt to eliminate it. It is now infrequent by the River Tweed but remains quite frequent by the Whiteadder Water where it had colonised some very inaccessible places, including damp cliff ledges. The seed bank is relatively long-lived and it seems that the programme will have to be continued for some years yet if it is to be fully eradicated. Where it is eliminated there is a suite of other neophytes ready to colonise the vegetation gaps and the *Allium paradoxum* Few-flowered Garlic which flourished under its canopy is wholly undeterred by its removal.

Hesperis matronalis Dame's-violet

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	3% monads	9% tetrads	61% hectads
Britain 1987-1999		16% tetrads	47% hectads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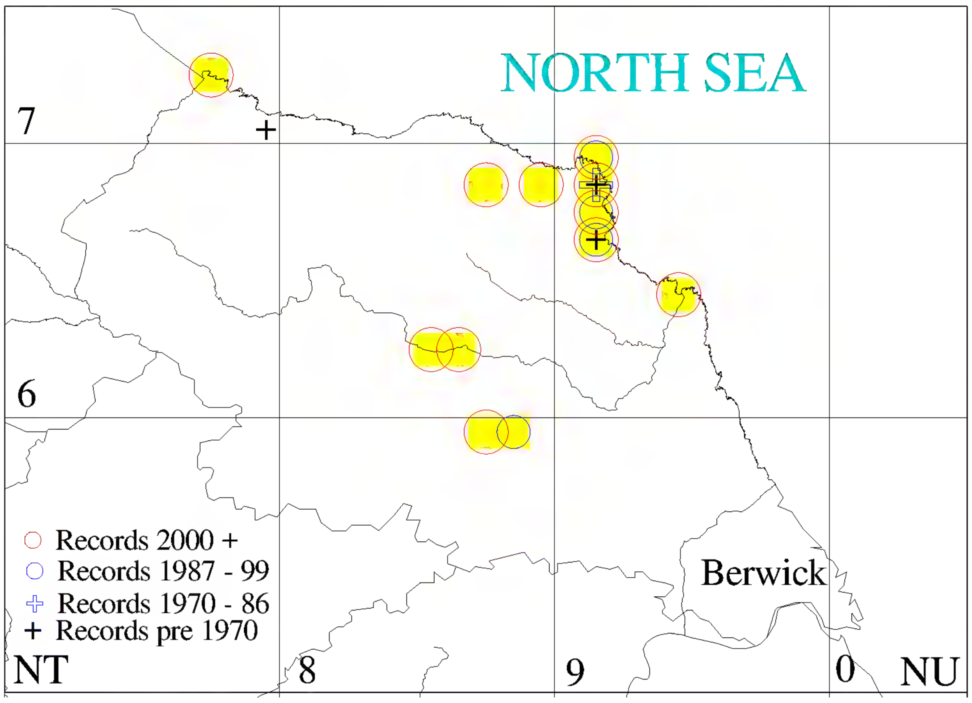
Hesperis matronalis is very widepsread in lowland Britain, but usually near habitation. It is a bit of a Tweed speciality, being fully naturalised near the riverside, usually where there is a degree of shade. It is an ancient cottage-garden plant first recorded in 1831. It is evening-scented and is an occasional host plant for the larvae of the butterfly *Anthocharis cardamines* Orange Tip.

Hippophae rhamnoides Sea-buckthorn

Coast, neophyte, intrusive neophyte

Berwickshire 1987-2013	1% monads	2% tetrads	17% hectads
Britain 1987-1999		3% tetrads	14% hectads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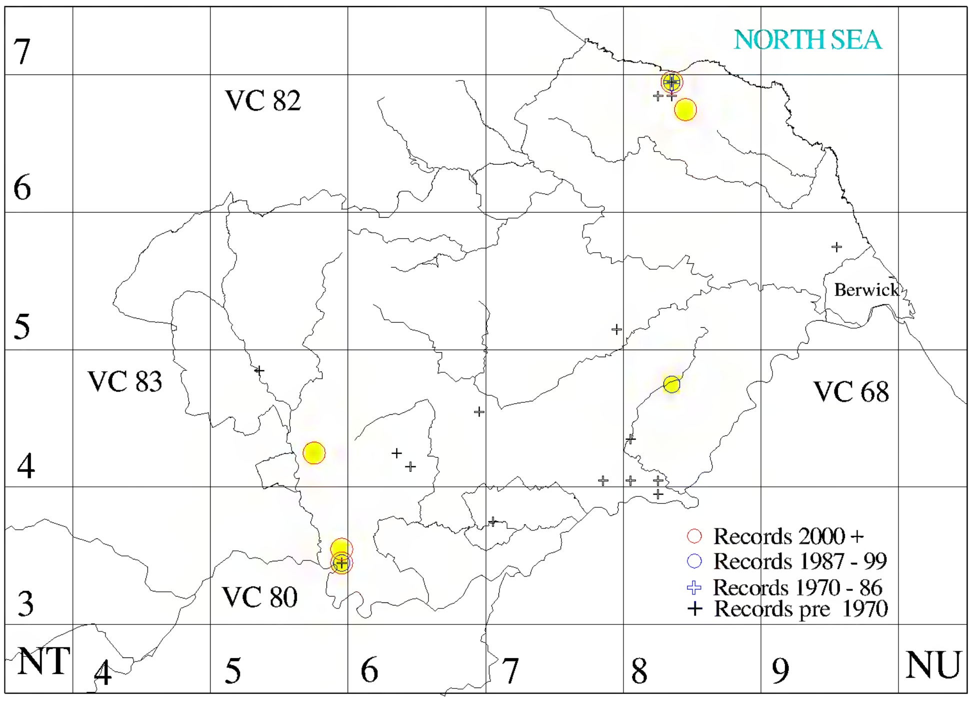
Hippophae rhamnoides is native along part of the east coast of England but is widely introduced elsewhere, especially near the coast as it is very tolerant of salt spray. It suckers strongly in sandy soil and can be very invasive.

It is increasingly planted in Berwickshire, sometimes in the expectation that its berries will provide an autumn food source for migrating birds, as at St Abbs Head 96. It has not so far invaded any of the few sandy beaches. There is a dense colony on sand at the mouth of the Dunglass burn 77, but it is on the north side of the burn and thus falls in East Lothian.

Hippuris vulgaris Mare's-tail

Wetland, native, rare or scarce

Berwickshire 1987-2013	4 sites	2% tetrads	17% hectads
Britain 1987-1999		4% tetrads	27% hectads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Hippuris vulgaris has a widespread but scattered distribution in Britain. It grows in pools within mires or other small water bodies.

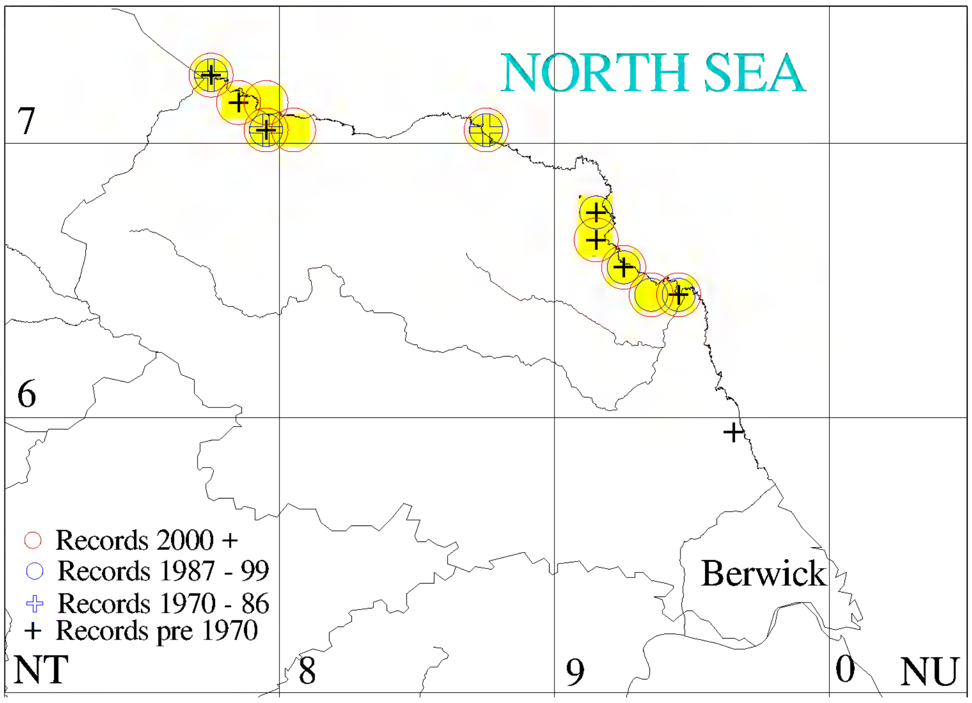
There are few colonies in Berwickshire. It is known in a small moss at Harly Darlies 86 where it grows in a pool partly overshadowed by *Salix aurita* Eared Willow, in similar habitat in the rand round Drone Moss 86, in Halidean Mill Moss 53 and in an old mill pond at Birkenside 54.

It was formerly more widespread. The colony at Morningbank 84 could not be refound in 2009.

Honckenya peploides Sea Sandwort

Coast, native, rare or scarce

Berwickshire 1987-2013	10½ sites	2% tetrads	13% hectads
Britain 1987-1999		3% tetrads	19% hectads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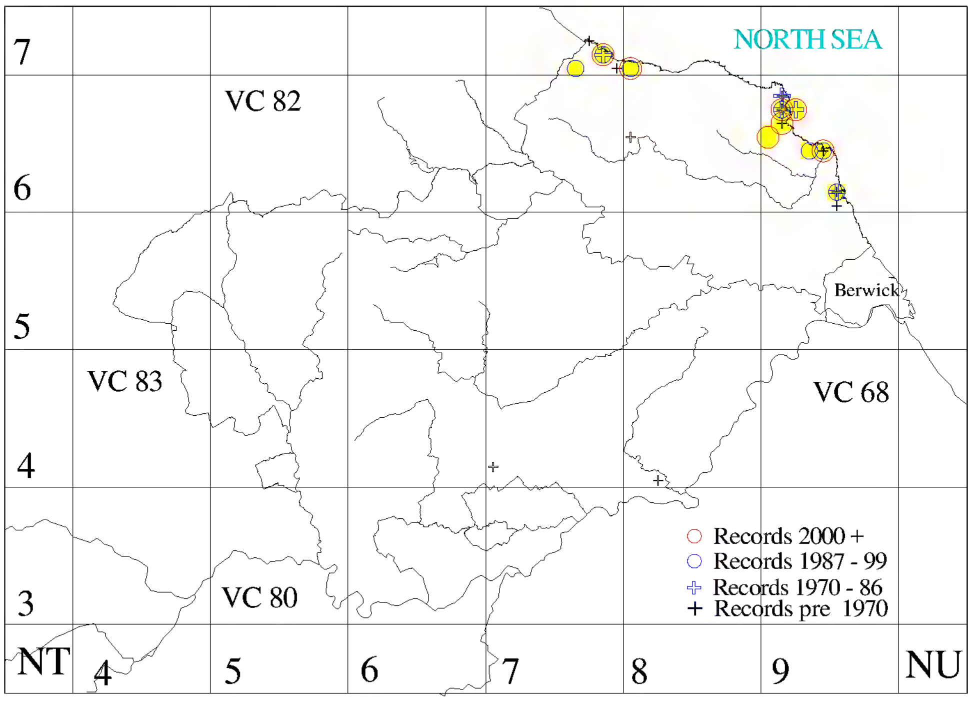
Honckenya peploides occurs all round the British Coast on shingle and sand where it may be abundant.

There are representative colonies on the Berwickshire coast wherever there is sand or shingle. The main colonies are at Ramsheugh Bay 77, Pease Bay 77, Brander Heugh 87, Coldingham Bay 96, Yellow Craig 96, Linkim Bay 96, Killiedraught Bay 96 and near Eyemouth Fort 96.

Hordeum murinum Wall Barley

Ruderal, archaeophyte, rare or scarce

Berwickshire 1987-2013	8½ sites	2% tetrads	13% hectads
Britain 1987-1999		32% tetrads	48% hectads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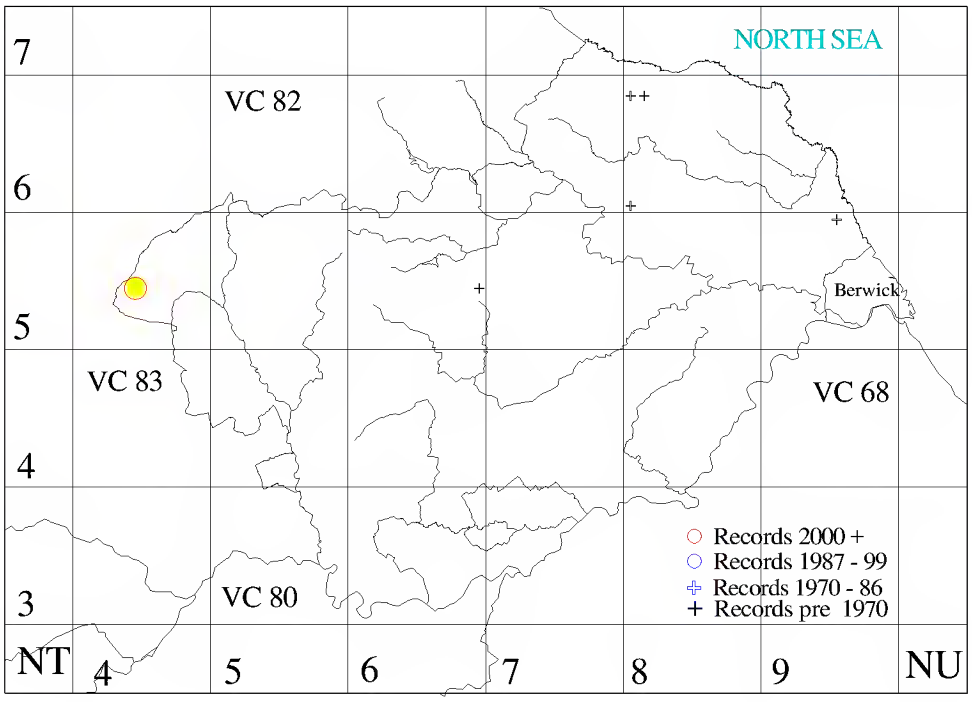
Hordeum murinum is very widespread in England but limited to the east coast in Scotland. It grows in ruderal habitats and in grassland where there is some disturbance.

It is now strictly coastal in Berwickshire and always found close to habitation, but it was formerly found further inland. It grows around Cockburnspath 77, Cove 77, St Abbs village 96, Coldingham 96 and Eyemouth 96.

Huperzia selago Fir Clubmoss

Moorland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		14% tetrads	23% hectads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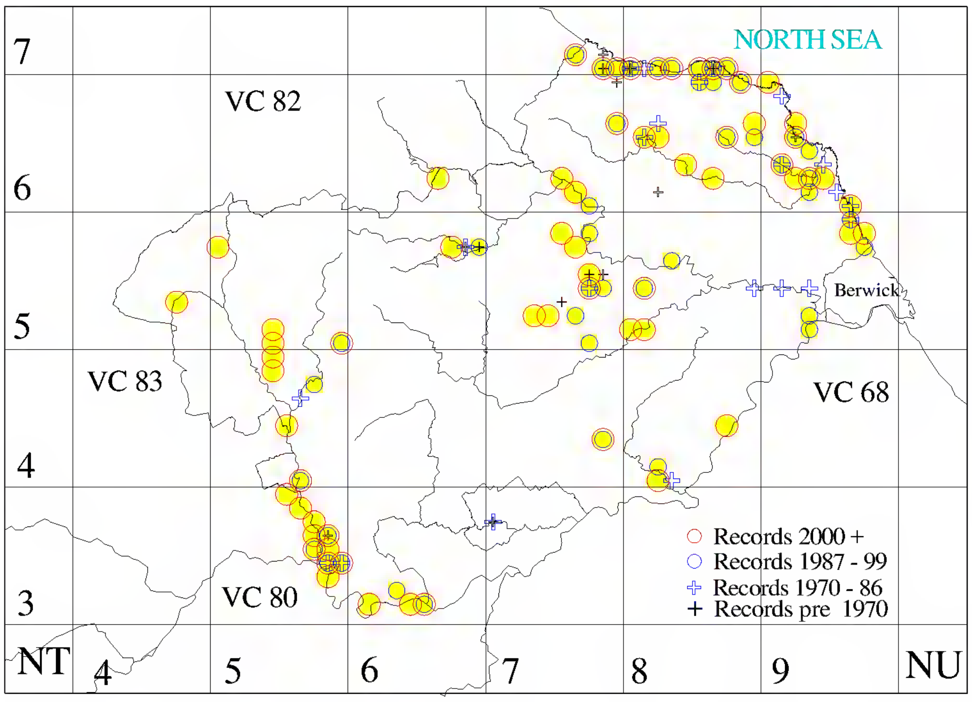
Huperzia selago is widespread in rocky montane habitats in the north of Britain.

It was thought to be long-extinct as a former moorland plant in Berwickshire but one plant was found in 2009 as a colonist on a stony substrate by a forestry road on Hartside Hill 45.

Hyacinthoides non-scripta Bluebell

Woodland, native, other axiophyte

Berwickshire 1987-2013	7% monads	19% tetrads	74% hectads
Britain 1987-1999		66% tetrads	80% hectads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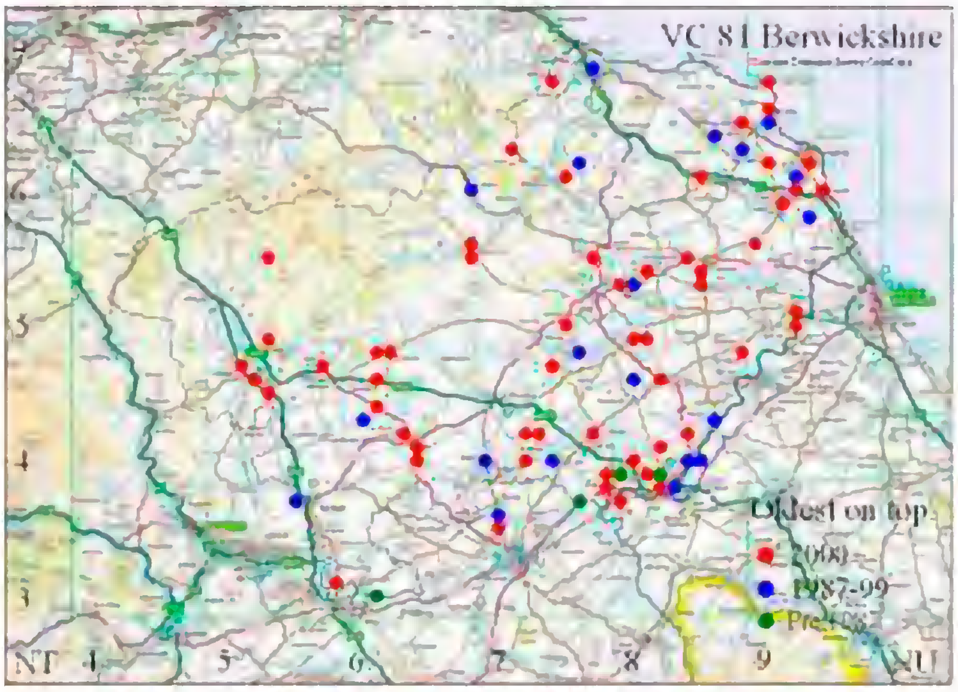
Hyacinthoides non-scripta is very widespread in Britain wherever there is ancient woodland and often forms large continuous carpets. This is not the situation in Berwickshire where other vernal species such as *Allium ursinum* Ramsons and *Mercurialis perennis* Dog's Mercury tend to dominate the ground flora in the surviving riverside woodlands. The best colonies are on the coast, often under bracken but sometimes in the open on shaded cliffs. Inland the colonies are usually modest patches, even in the Leader Water woodlands where this species is frequent, though a series of larger colonies have recently been discovered under bracken up the Earnscleugh Water 54 and there are fine colonies at Kimmerghame 85. I have once seen an autumn-flowering plant: one clump was found in full flower at Gledswood 53 in November 2001.

Some of the older records, especially those from the lower Whiteadder Water, may be errors for *H. x massartiana* Hybrid Bluebell. Plantings at Newton Don 73 have included *H. non-scripta*, *H. hispanica* Spanish Bluebell and their hybrid. Further hybridisation has occurred there. No obvious hybridisation has been seen elsewhere as the habitats of *H. non-scripta* and the hybrid seldom overlap.

Hyacinthoides x massartiana = H. hispanica x non-scripta Hybrid Bluebell

Grassland, neophyte, intrusive neophyte

Berwickshire 1987-2013	7% monads	19% tetrads	74% hectads
Britain 1987-1999		28% tetrads	35% hectads



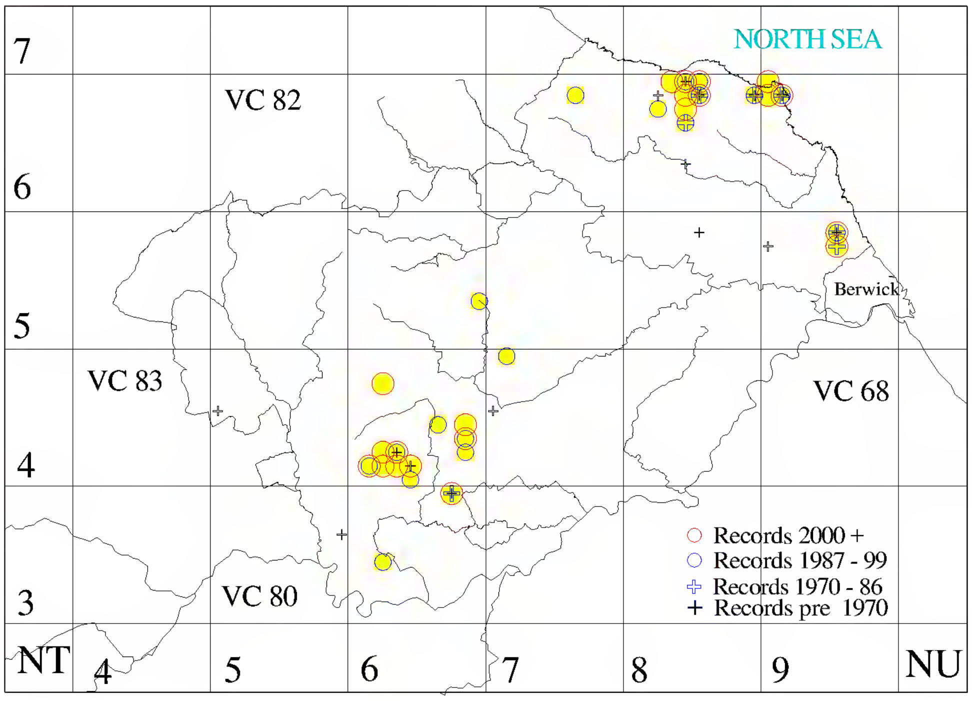
Hyacinthoides x massartiana is widely naturalised in Britain but only patchily recorded, as its identity was not generally known to recorders until 1987. Since then it has acquired notoriety for its ability to introgress with native *H. non-scripta* Bluebell.

The Berwickshire ‘oldest on top’ map suggests a taxon that is increasing rapidly. This is probably an illusion. It is much more commonly grown than either of its parents and has certainly been present in gardens in the county for a century or more and probably escaped from there to road verges and woodland not long afterwards. Colonies nearly always have some pink-flowered plants. It is only in recent years that it became familiar enough to recorders to be recorded even when not in flower. There is very little evidence of introgression with native *H. non-scripta*, which is a local plant in the county. The hybrid mainly occurs in more open habitats and on more fertile soils and is usually found in relatively modest colonies near houses. At Newton Don 73 it appears to have been planted in the park with both its parents and here there has been further crossing.

Hydrocotyle vulgaris Marsh Pennywort

Wetland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	6% tetrads	35% hectads
Britain 1987-1999		25% tetrads	60% hectads



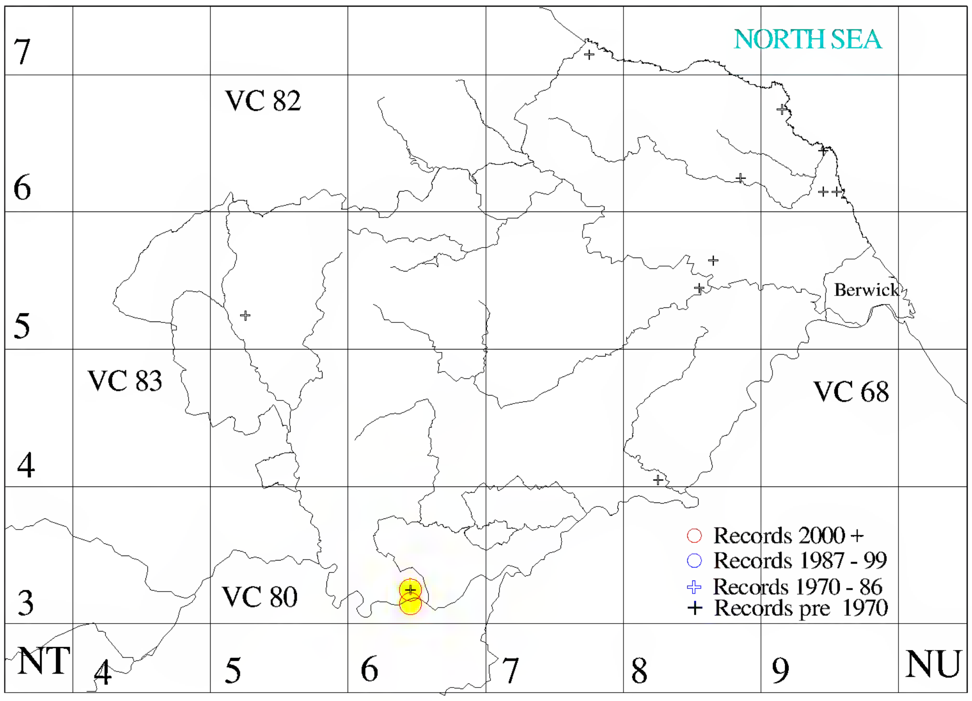
Hydrocotyle vulgaris is widespread in lowland Britain, not reaching far into the hills. It is a plant of the shallow edges of fens and spring-fed marshes. It is very local in Berwickshire but quite frequent and plentiful where it does occur. The main populations occur in the wetland around Gordon Moss 64 and in the Coldingham Common area 86. It also occurs at St Abbs Head 96 and at Lamberton Moor Moss 95.

There is no evidence of recent colonisation. Decline is suspected but little conclusive evidence is available as not all the former colonies have been searched for recently.

Hyoscyamus niger Henbane

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	1 site	0.6% tetrads	4% hectads
Britain 1987-1999		0.8% tetrads	10% hectads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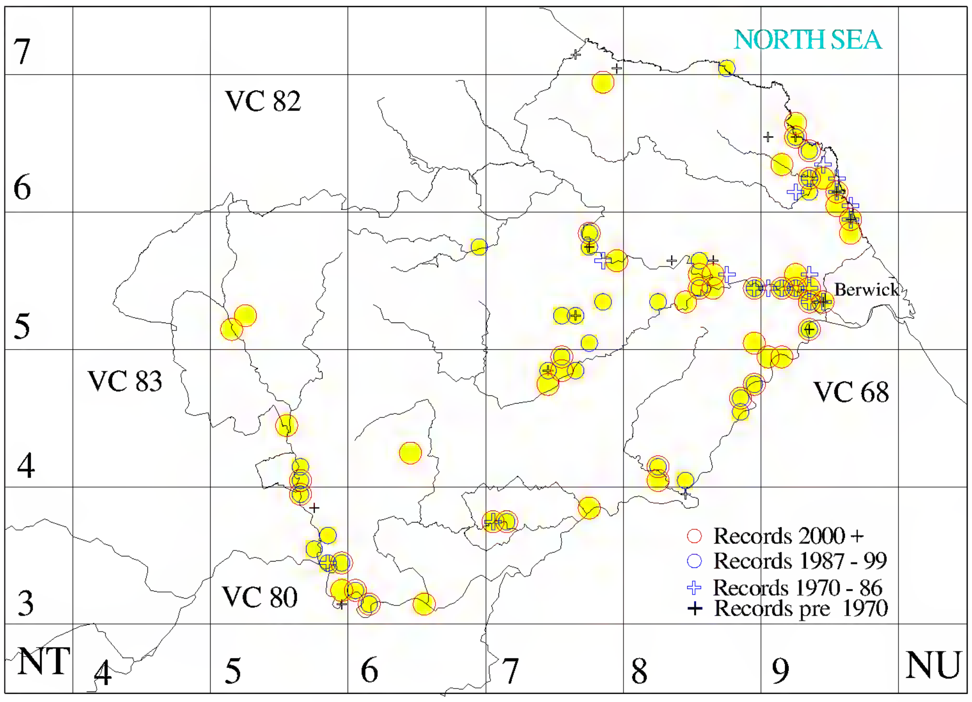
Hyoscyamus niger is local and declining in southern Britain. It is rare in Scotland and now only on the east coast. It grows in sandy open ground and ruderal habitats.

It was formerly widespread near habitation in Berwickshire following earlier cultivation for medicinal use, but was thought extinct. However ruderal habitat of great interest was discovered in 2011 on an eroding bank by the River Tweed at Dalcove 63. Here there is a large colony of *Hyoscyamus niger* with *Ballota nigra* Black Horehound, *Conium maculatum* Hemlock, *Echium vulgare* Viper's-bugloss, *Malva moschata* Musk Mallow and *Reseda luteola* Weld. All these plants were once used medicinally and their association is strongly suggestive of a link with the mediaeval hospital dedicated to St Mary Magdalene that stood near this spot and was destroyed by the English in 1544.

Hypericum hirsutum Hairy St John's-wort

Woodland, native, other axiophyte

Berwickshire 1987-2013	6% monads	15% tetrads	70% hectads
Britain 1987-1999		18% tetrads	37% hectads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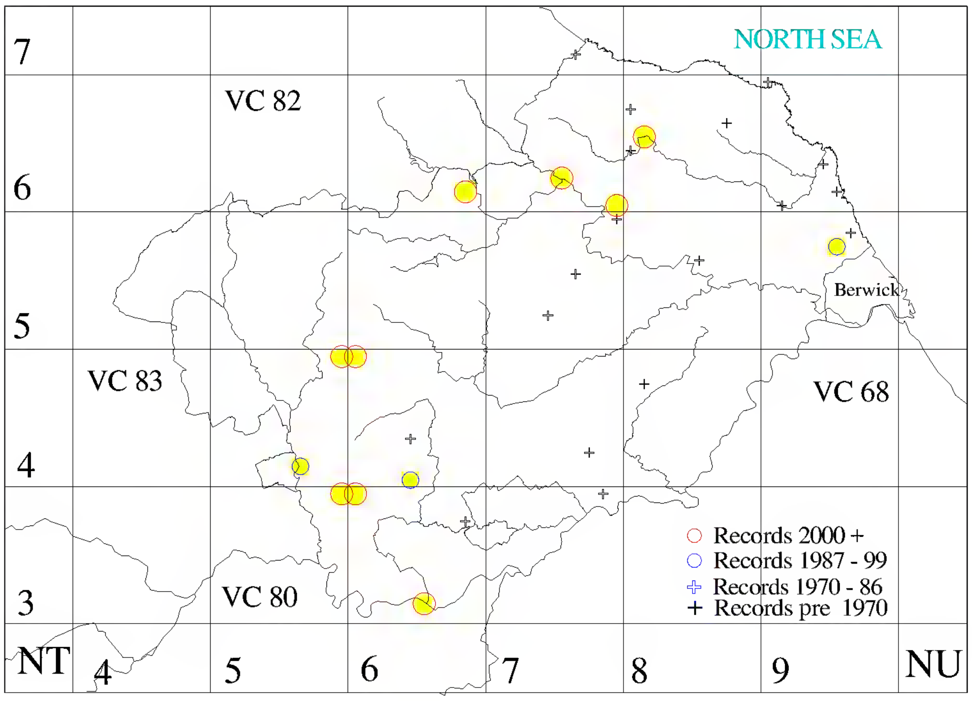
Hypericum hirsutum is a woodland-edge species of basic soils most frequent in southern and eastern Britain. In Berwickshire it is very much a lowland species that is quite plentiful in woodland and scrub along the lower Whiteadder Water and those sections of the coast that have the more base-rich soils. There is a further cluster of sites along the River Tweed around Mertoun 63. Elsewhere it is localised. It is often associated with *Origanum vulgare* Wild Marjoram.

There is no evidence of colonisation away from its historic sites and any recent decline has been at scales finer than 1km.

Hypericum humifusum Trailing St John's-wort

Ruderal, native, rare or scarce

Berwickshire 1987-2013	5¾ sites	3% tetrads	35% hectads
Britain 1987-1999		21% tetrads	44% hectads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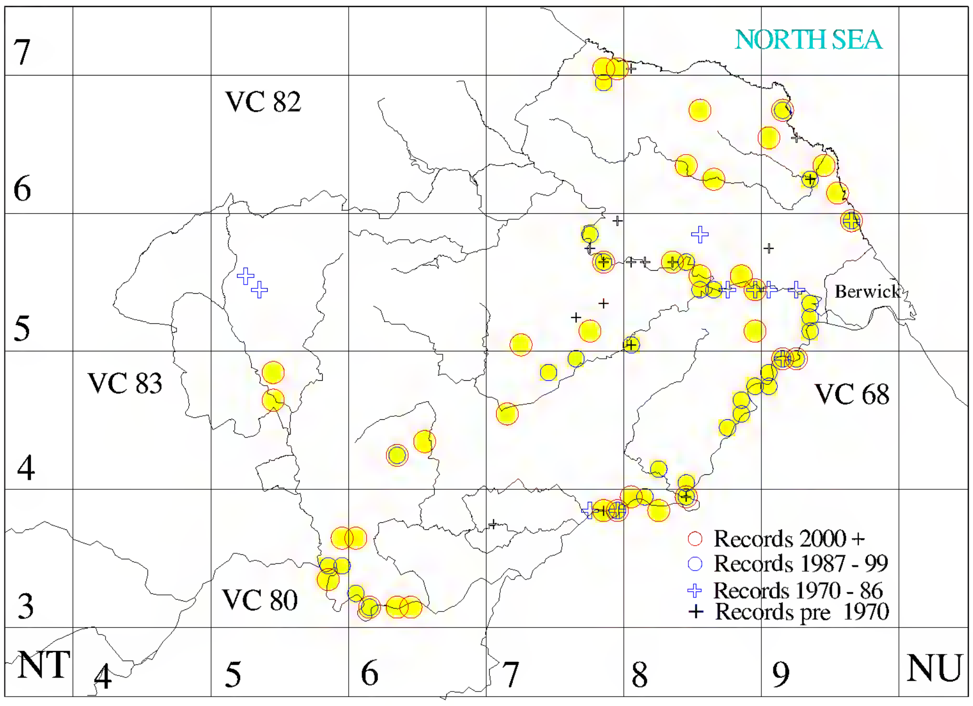
Hypericum humifusum is found mainly in south and west Britain where it grows in well-drained habitats on moors, in woodland or in more ruderal situations.

It is now more or less casual in Berwickshire, but possibly increasing after a period of decline. It has been found in setaside on a few occasions, on a dry bank near the Well Burn near Cranshaws 66, at the top of screes near a domestic TV mast in Bankend Wood 76 and in Grantshouse Quarry 86. It is a challenge to interpret the dispersal pattern behind this miscellany of sites, but vehicles and human footwear must surely play a part.

Hypericum perforatum Perforate St John's-wort

Riverside, archaeophyte

Berwickshire 1987-2013	5% monads	15% tetrads	70% hectads
Britain 1987-1999		62% tetrads	46% hectads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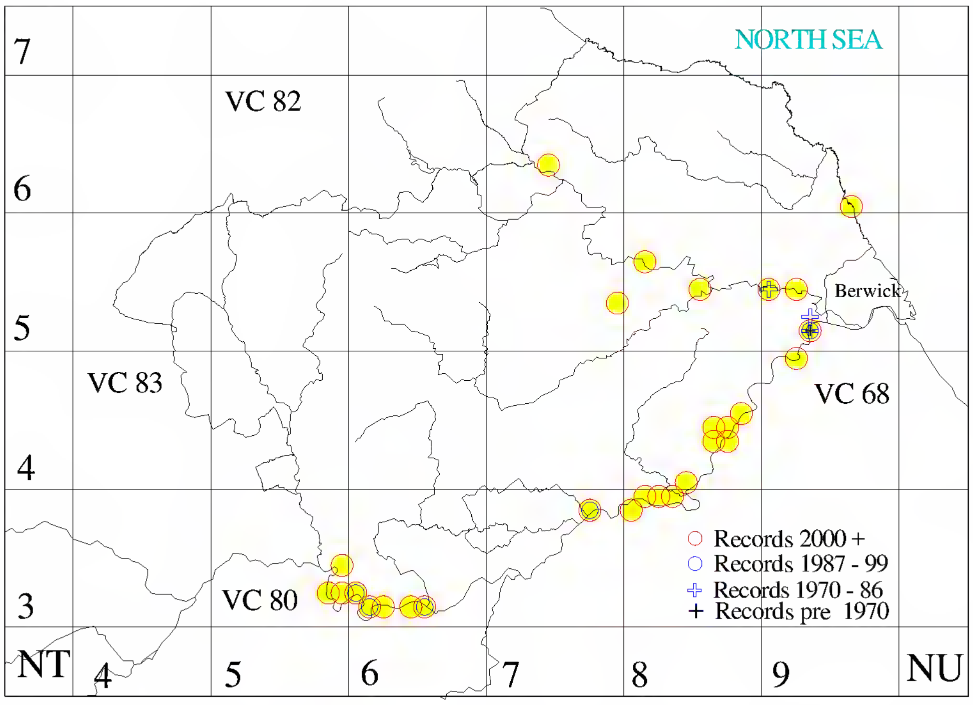
Hypericum perforatum is very widespread in England but much less so in Scotland. It grows in dry grassland and ruderal habitats with a special preference for railway ballast.

It is thought to have been introduced to Berwickshire in two main phases: first at an early period for cultivation as a medicinal plant and secondly with the construction of the railways in the nineteenth century. From these introductions it has been further dispersed by rivers. It is still found along the old railway and around towns and villages. It is a relatively sparse colonist of dry banks overlooking rivers.

Hypericum x desetangsii = H. maculatum x perforatum Hybrid St John's-wort

Riverside, archaeophyte

Berwickshire 1987-2013	3% monads	6% tetrads	48% hectads
Britain 1987-1999		10% tetrads	3% hectads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Hypericum x desetangsii has a similar British range to *H. perforatum* Perforate St John's-wort but has been recorded much less consistently. It is most often found in partly shaded habitats rather than the open habitats favoured by *H. perforatum.*

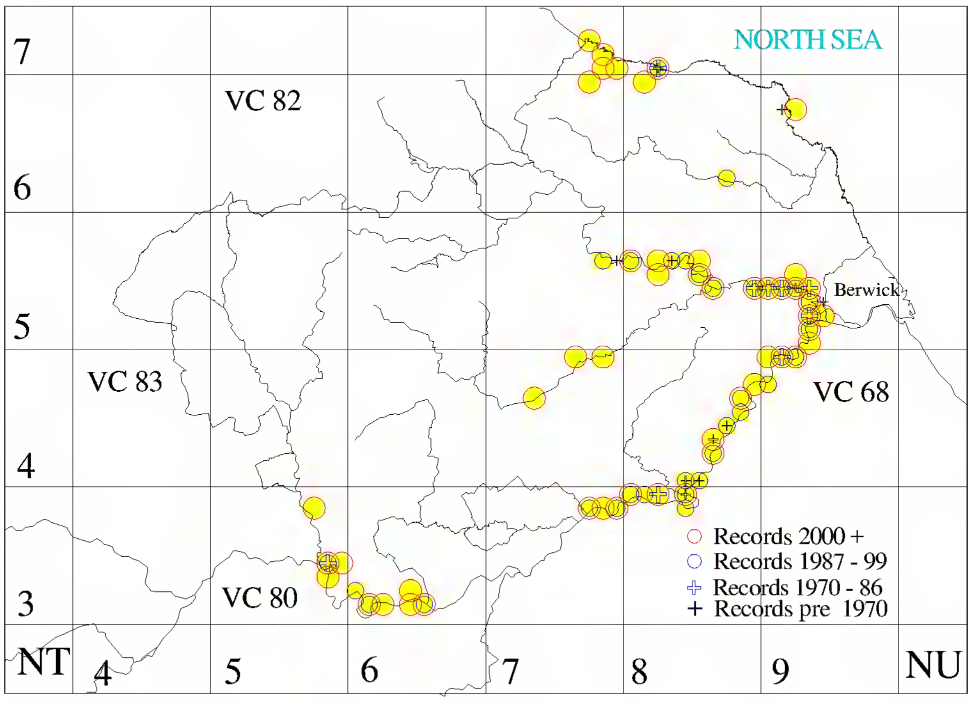
As the *H. maculatum* Imperforate St John's-wort parent is rare and more or less casual in Berwickshire, the hybrid is thought to have had an independent existence in the county, though backcrossing with *H. perforatum* has been detected where they grow together. It may have been introduced both as a medicinal plant and with the railways and to have been dispersed by rivers, like *H. perforatum.* However, as *H. maculatum* is probably native in Roxburghshire, it is possible that the hybrid may have originated there by crossing with introduced *H. perforatum* and then to have dispersed down the River Tweed.

The hybrid is widespread on banks by and above the River Tweed, sometimes along woodland edges well away from the river, but is much scarcer by the Whiteadder Water and rare elsewhere.

Impatiens glandulifera Indian Balsam

Riverside, neophyte, intrusive neophyte

Berwickshire 1987-2013	5% monads	12% tetrads	65% hectads
Britain 1987-1999		24% tetrads	50% hectads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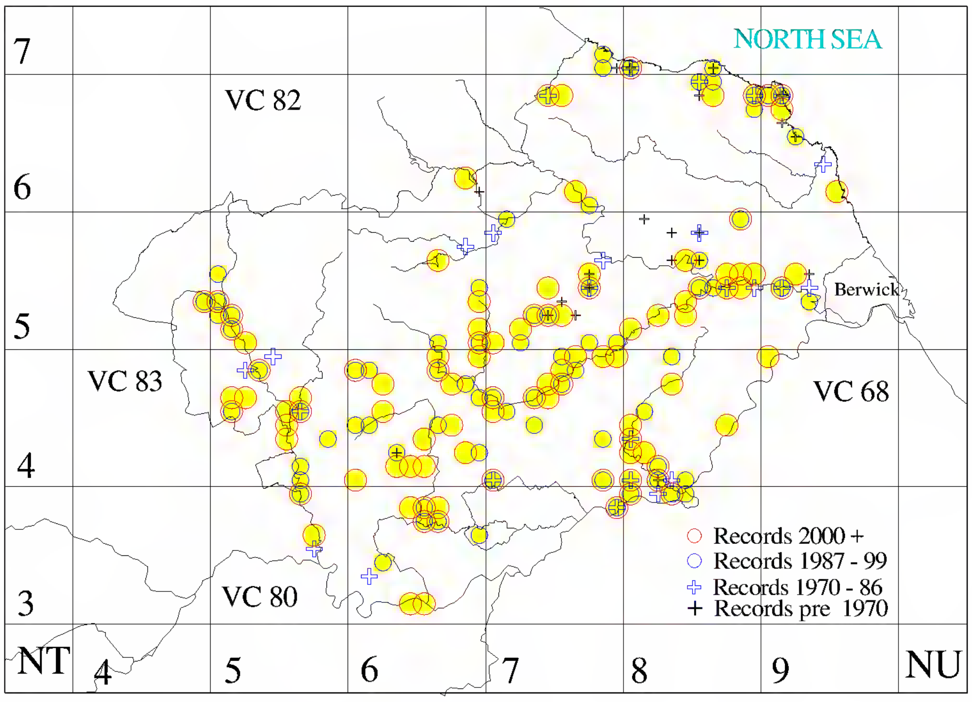
Impatiens glandulifera is now very widespread in England and increasingly so in the rest of Britain. It is a tall annual colonising wet water margins that has become demonised as an invasive species. Invasive it certainly is, but at least in Berwickshire it is doubtful if any sensitive native species are displaced along the main river system. It has only recently been introduced to the Leader and Blackadder Waters. Most fishermen have little objection to it, but there is now a programme for its control, though that may prove difficult. It will carry the risk of damaging native plants adjacent to its colonies and of opening up the habitat for other invasive species.

However it has now colonised some small burns, notably those at Tower Dean 77 and Redheugh 87 on the coast, and here it may indeed be displacing native flush communities of interest.

Iris pseudacorus Yellow Iris

Wetland, native, other axiophyte

Berwickshire 1987-2013	12% monads	29% tetrads	91% hectads
Britain 1987-1999		56% tetrads	85% hectads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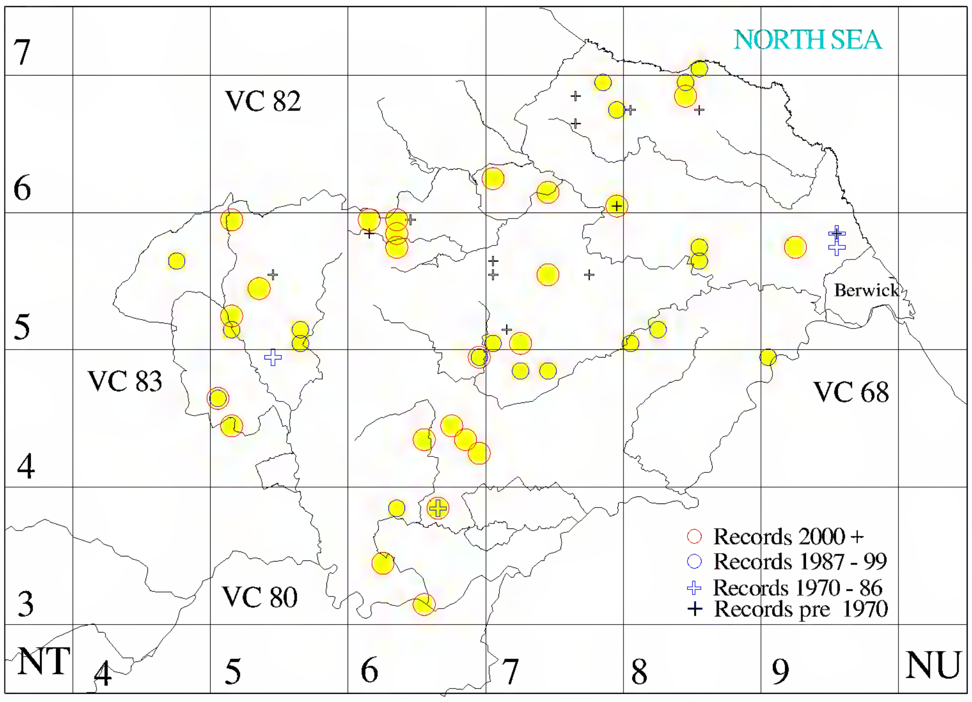
Iris pseudacorus is very widespread in Britain except in the higher hills. It grows by rivers and lochs and in marshes. In Berwickshire it is frequent along and near the Leader, Eden, Blackadder, and Leet Waters and some of their tributaries but is scarce by the River Tweed whose oxbows and other nearby wetland have been almost all eliminated over the years. It is inexplicably absent from the Eye Water and adjacent wetland.

This is a species that sets much seed and undoubtedly colonises where opportunities occur as riversides are altered by floods. Any recent decline is insufficiently evidenced by the historical record.

Isolepis setacea Bristle Club-rush

Wetland, native, other axiophyte

Berwickshire 1987-2013	3% monads	10% tetrads	61% hectads
Britain 1987-1999		22% tetrads	53% hectads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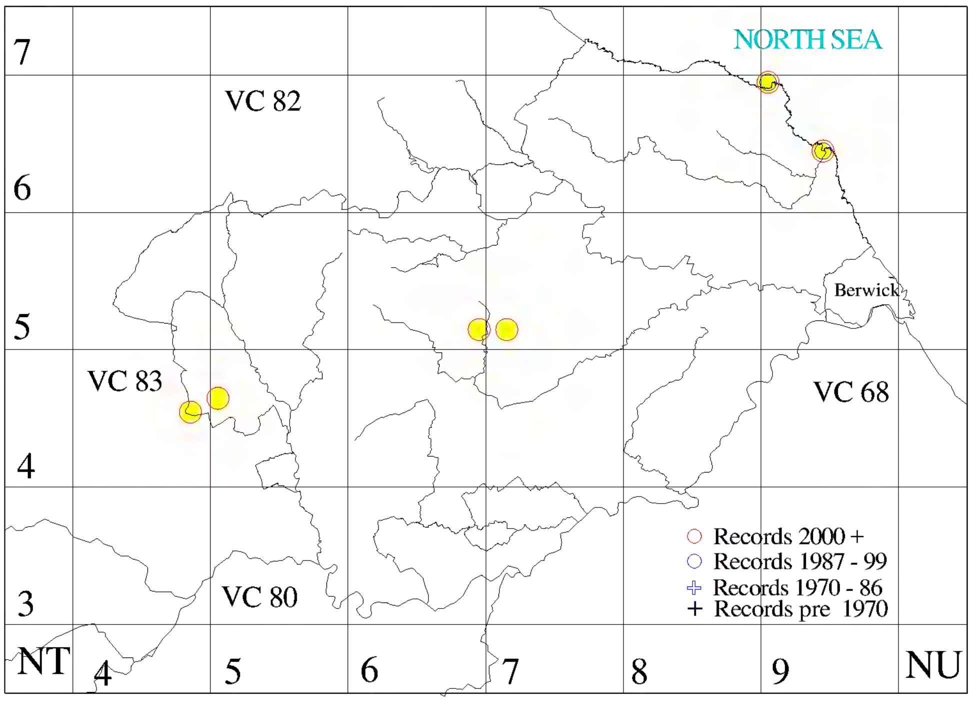
Isolepis setacea is a perennial species that is probably often short-lived and depends on a persistent seed bank. It is widespread in Britain but scarce in many areas. It colonises habitat gaps in muddy or peaty areas, particularly at the moorland edge in relatively acidic conditions. The Berwickshire distribution is difficult to interpret. It certainly demonstrates that this is an elusive plant, often present in small populations that may come and go depending on the management regime, perhaps being favoured by cattle grazing with its ability to generate habitat gaps. It is certainly under-recorded. This is a species that may well still colonise at a distance as well as within a grazing unit, perhaps with long-distance dispersal being effected by birds. Some overall decline is suggested by the paucity of recent records in the east of the county.

Juncus ambiguus (J. ranarius) Frog Rush

Coast, native, rare or scarce

Berwickshire 1987-2013	6 sites	2% tetrads	22% hectads
Britain 1987-1999		0.5% tetrads	4% hectads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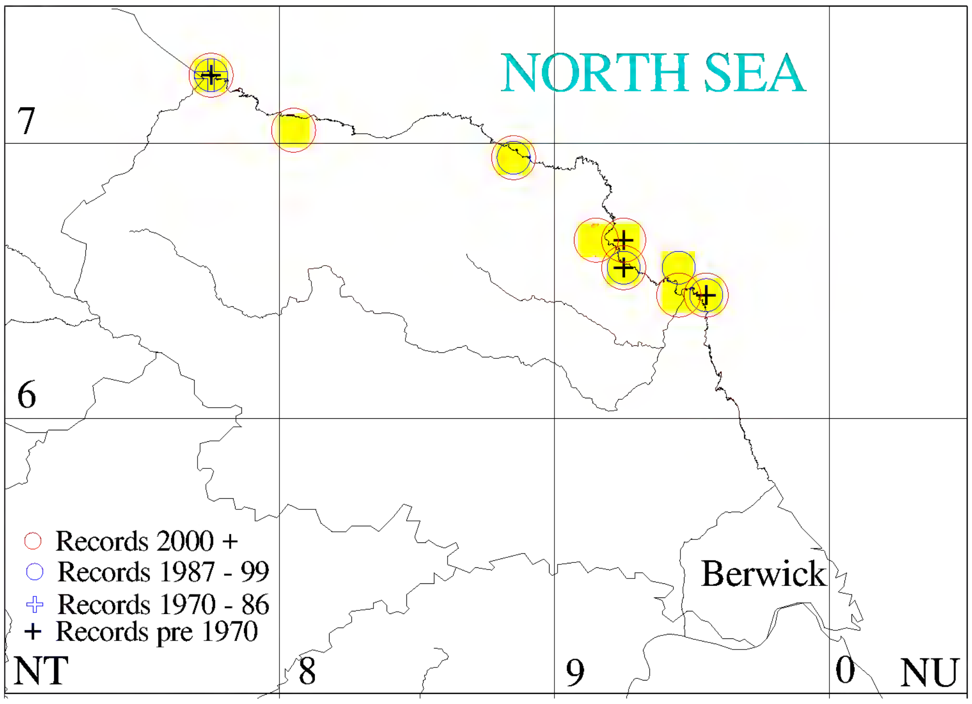
Juncus ambiguus is the diploid segregate of the *Juncus bufonius* Toad Rush aggregate, with a much more limited habitat than *J. bufonius sensu stricto,* and virtually restricted to seepages on the seashore. Still under-recorded, it has been found in scattered locations round British coasts.

In Berwickshire it was known only in small numbers on the coast at Petticowick 96 and the mouth of the Eye Water 96 until it was found in quantity on roadside gravel by the B6456 near Kettleshiel 65, 75 in 2002 and in the same habitat by the B6362 on Lauder Common 44, 54 in 2012.

Juncus gerardii Saltmarsh Rush

Coast, native, rare or scarce

Berwickshire 1987-2013	7 sites	2% tetrads	17% hectads
Britain 1987-1999		7% tetrads	27% hectads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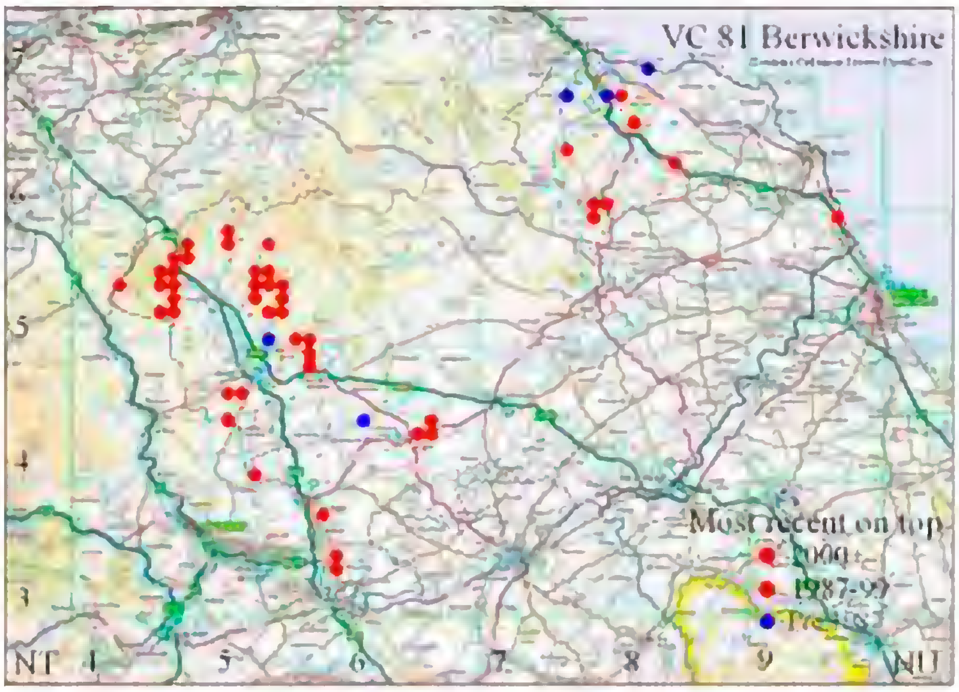
Juncus gerardii is found all round the British coast in saltmarsh and coastal rock pools.

It has a restricted distribution in Berwickshire due to shortage of habitat. Its main localities are Ramsheugh Bay 77, Yellow Craig 96 and Gunsgreen 96.

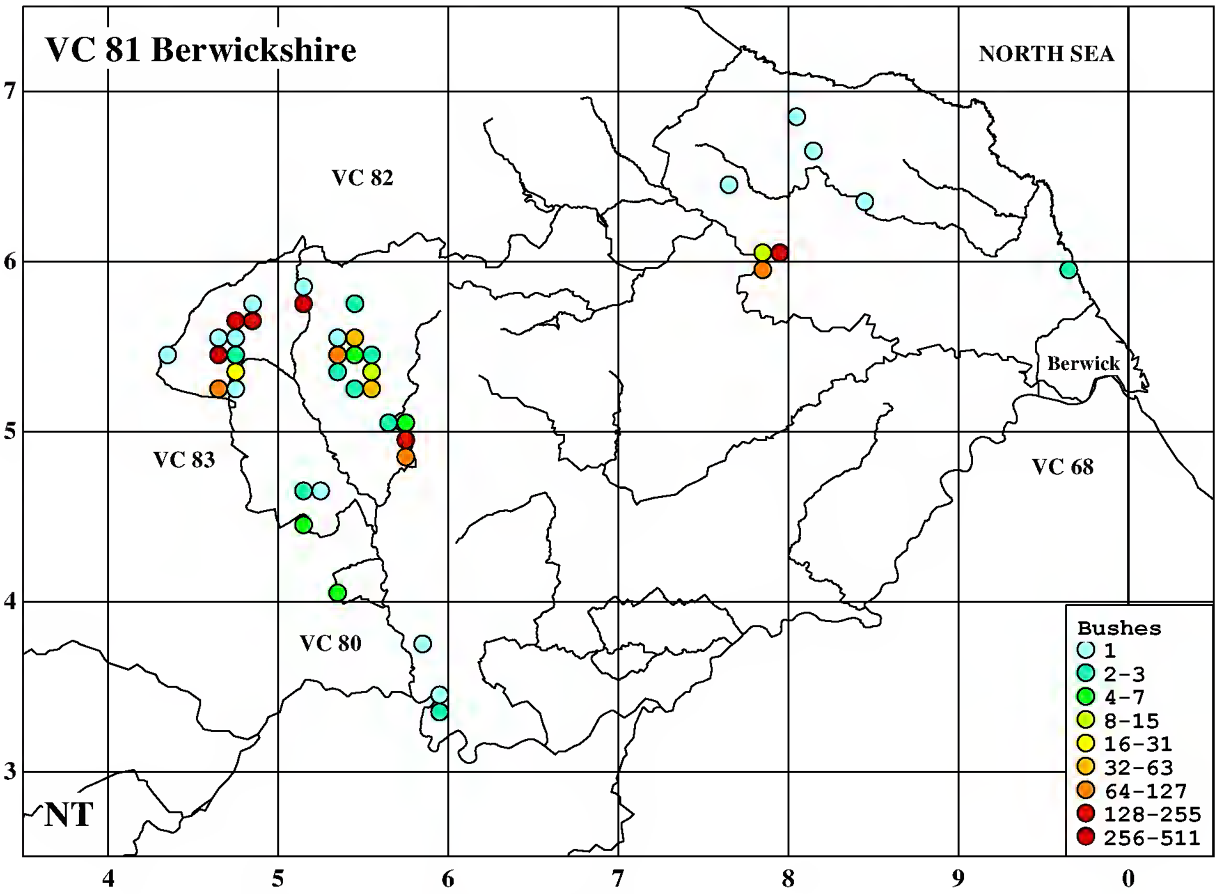
Juniperus communis subsp. communis Juniper

Woodland, native, selected axiophyte

Berwickshire 1987-2013	4% monads	9% tetrads	39% hectads
Britain 1987-1999		11% tetrads	26% hectads



Juniperus communis subsp. communis is most widespread in the Scottish Highlands but there are also concentrations of records in southern Scotland, northern England and on the chalk in southern England. In the north it is found in a wide range of habitats including woodland, open moorland and rocky slopes on both acidic and basic soils. The Berwickshire distribution shows a strong negative correlation with open heather moorland managed for grouse. It seems inconceivable that there were not once colonies up the Dye Water 65 and some of its tributary burns. There is a strong cluster of sites in the tributary burns of the Leader Water 45, 55. The junipers grow on steep slopes, some in gorges with remnant woodland and some on more open slopes but all in places protected from muirburn. There are also fine but aging colonies by the Whiteadder Water 75, 76 in woodland habitats. The outlying sites are all of just a few bushes, including the two bushes on the top of a sea cliff below Lamberton 95. Many of the colonies have been reinforced in the last few years by plantings and there have also been plantings in a few other sites, notably in the community woodland at Gordon Common 64.

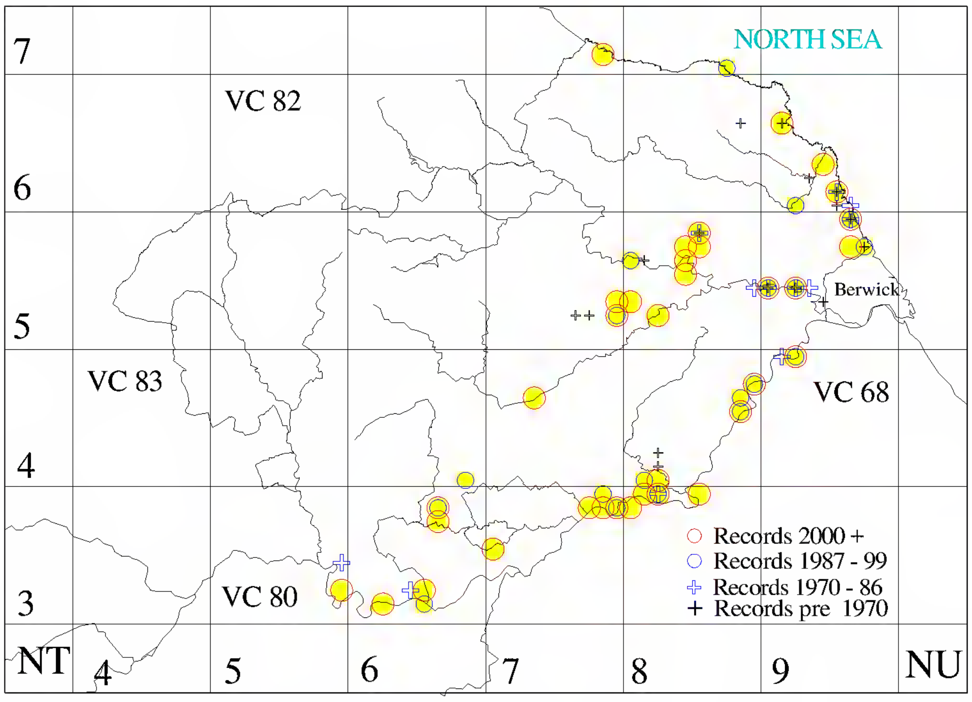


There are only a few sizable populations, as shown on this detailed map of the native bushes as surveyed in 2002 and 2003, with a few later revisions. These are Threeburnford Cleugh 45, 111 bushes, Raughy Burn 45, 381 bushes, Headshaw Haugh 45, 497 bushes, Blythe Water 54, 55, 277 bushes, Kelphope Burn, 55, 303 bushes, lower Whalplaw Burn 55, 179 bushes, Earnscleugh Water 65 bushes, Hoardweel 75, 108 bushes, Aikyside Wood 76, 312 bushes. The counts should not be considered definitive, as groups of bushes can be difficult to count, especially where some are half-fallen. Estimate for all sites 2,295 bushes (excluding recent plantings).

Knautia arvensis Field Scabious

Grassland, native, selected axiophyte

Berwickshire 1987-2013	4% monads	10% tetrads	61% hectads
Britain 1987-1999		27% tetrads	49% hectads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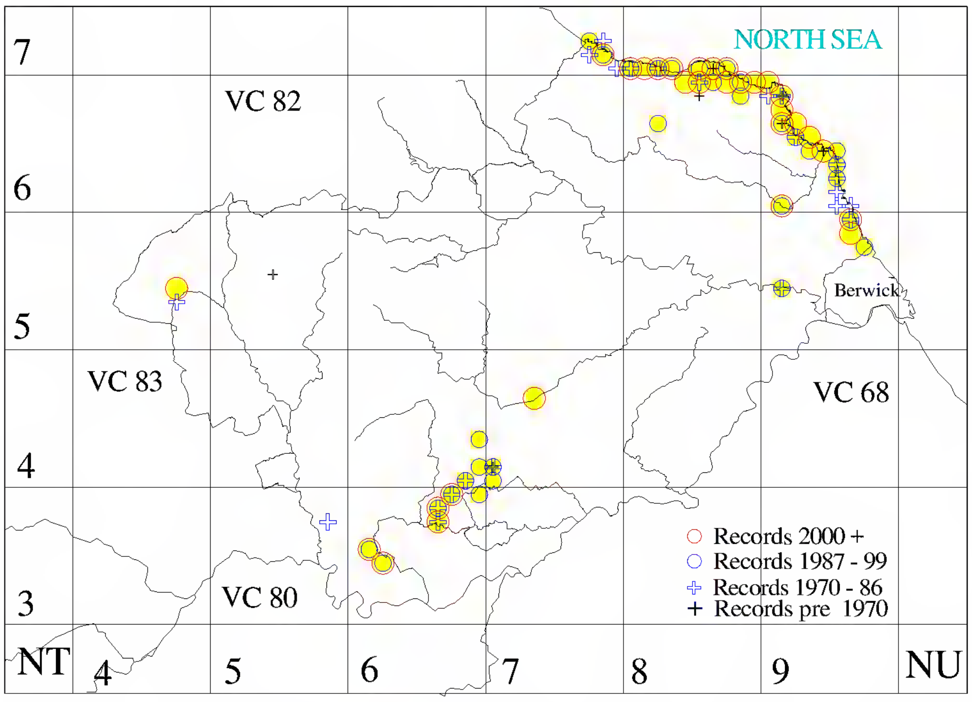
Knautia arvensis is a plant of neutral or calcareous grassland that is widespread in England and Wales but largely limited to eastern Scotland as far north as the River Tay. It is very localised in Berwickshire with the best colonies being on sandy soils near the River Tweed. Elsewhere it is occasionally met with along field borders, road verges and disused railways where the lie of the land gives some protection from eutrophication. All the localities are lowland.

Field experience suggests that this species is in terminal decline due to eutrophication with just a very few plants surviving in many areas, though the map shows that any such decline has yet to affect the distribution at 1km scale. There is no evidence of recent colonisation. Rather surprisingly, this species has not been noted in sown wildflower seed mixes, though some plants near a house at Burnmouth 96 could have been introduced.

Koeleria macrantha Crested Hair-grass

Grassland, native, other axiophyte

Berwickshire 1987-2013	4% monads	8% tetrads	39% hectads
Britain 1987-1999		11% tetrads	32% hectads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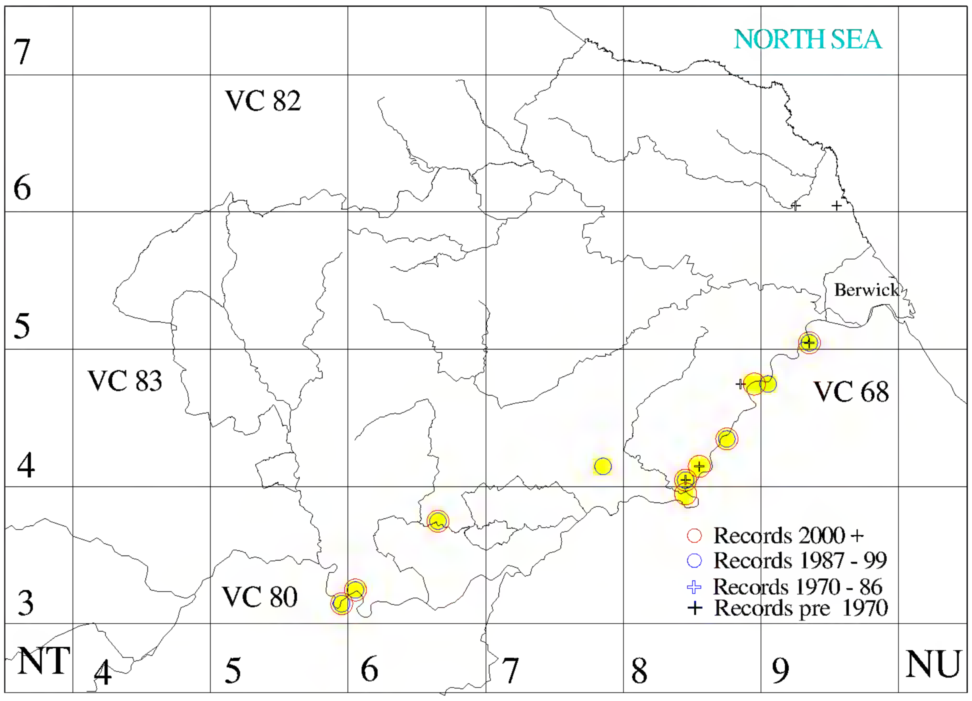
Away from the English limestone, *Koeleria macrantha* is largely a coastal plant and the Berwickshire populations reflect this, though the grass finds an alternative habitat on the igneous rock of the Kelso Traps. The habitat is rocky grassland and there is a strong association with *Helianthemum nummularium* Common Rockrose but the distribution is more localised than for that species.

Some colonies are large, as at St Abbs Head 96, but in other places suitable habitat has been reduced by relaxation of grazing and scrub invasion. The few disjunct inland populations away from the Kelso Traps appear to be in decline but it is possible that these small populations have been overlooked recently.

Lactuca virosa Great Lettuce

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	10 sites	2% tetrads	30% hectads
Britain 1987-1999		7% tetrads	18% hectads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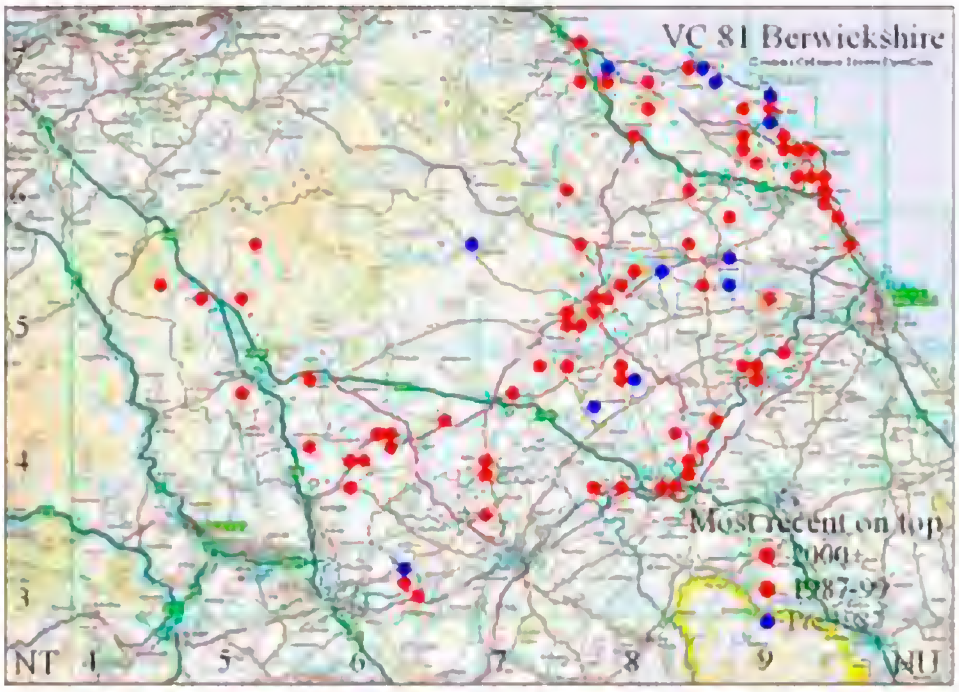
Lactuca virosa is widespread in southeast England but scarce elsewhere and is often an introduction. It is a colonist of dry ruderal habitats and has been used medicinally.

The Berwickshire colonies are unlikely to be native but the great majority are very long-established in a most characteristic habitat on massive sandstone rock exposures overlooking the River Tweed. The main sites are below Dryburgh 53 and above Mertoun Bridge 63, at Coldstream 83, 84, Lennel 84, above Milne Graden 84, at Blount Bank 84 and above the Union Bridge 95. Away from the Tweed there is a colony on rocks at Muckle Thairn 63 above the Eden Water.

Lamium amplexicaule Henbit Dead-nettle

Arable, archaeophyte, selected axiophyte

Berwickshire 1987-2013	6% monads	17% tetrads	78% hectads
Britain 1987-1999		18% tetrads	36% hectads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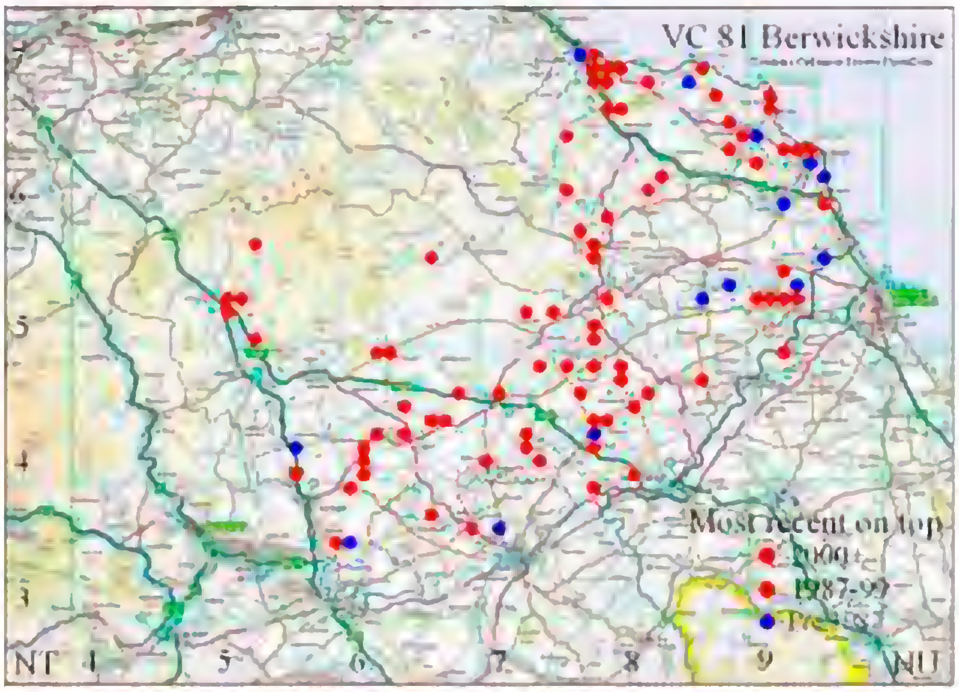
Lamium amplexicaule is a weed of light arable land and ruderal habitats, more common in southern England than in the north. It appeared to have increased in Berwickshire in the 1990's, possibly because of the prevalence of set-aside.

Any increase has not been maintained post-1999 and this remains a relatively scarce species except around Eyemouth 96, where it is rather frequent.

Lamium confertum Northern Dead-nettle

Arable, archaeophyte, selected axiophyte

Berwickshire 1987-2013	7% monads	19% tetrads	74% hectads
Britain 1987-1999		3% tetrads	7% hectads



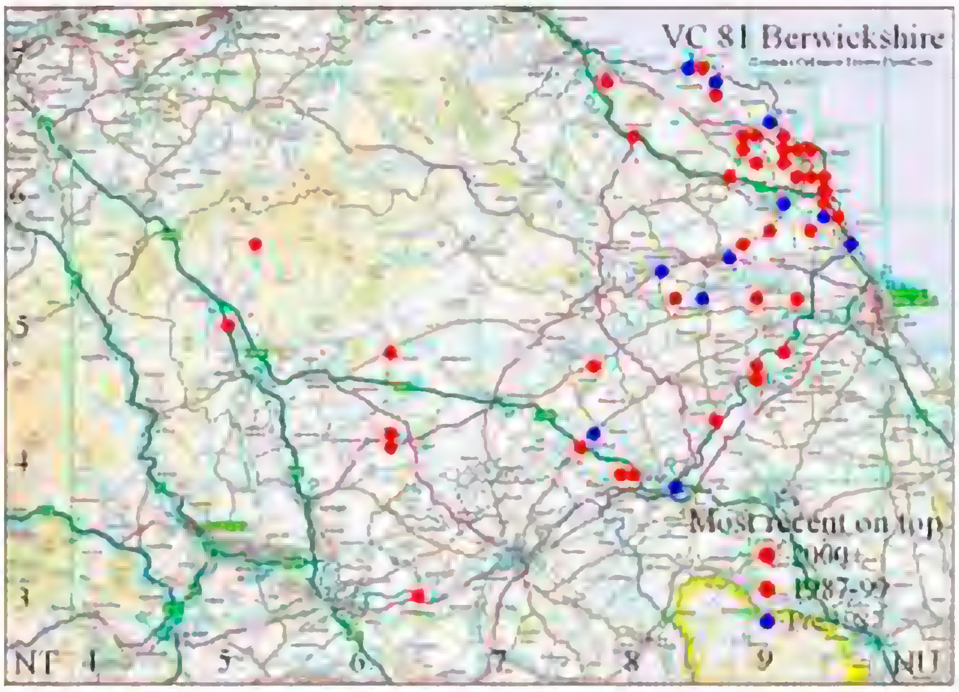
For a species that is almost confined to Scotland, *Lamium confertum* is at first sight remarkably evenly distributed across the arable land of the county. However it does in fact favour the more marginal land at higher altitudes, except near the coast where the three less-common *Lamium* species, L *amplexicaule* Henbit Dead-nettle, *L. confertum* and *L. hybridum* Cut-leaved Dead-nettle, are often found together on light soils.

This species is proving a resilient one with no recent change apparent.

Lamium hybridum Cut-leaved Dead-nettle

Arable, archaeophyte, selected axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	52% hectads
Britain 1987-1999		17% tetrads	31% hectads



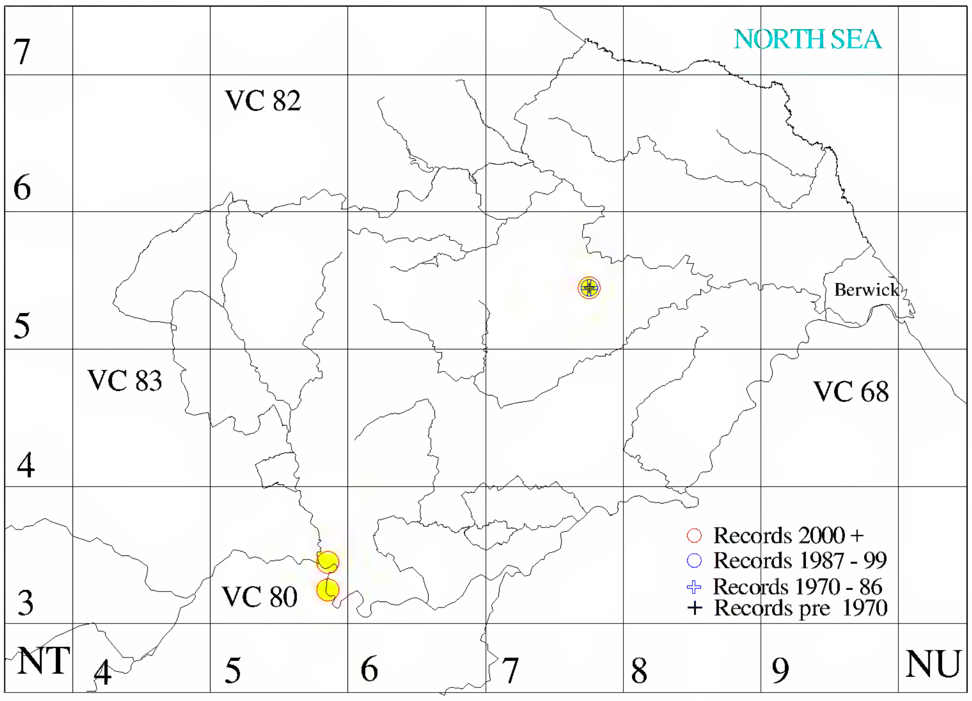
As would be expected of a species whose British distribution is concentrated in the southeast, *Lamium hybridum* is frequent only near the coast in Berwickshire, especially around Eyemouth 96. Rather surprisingly, a few plants have been encountered in several places in the west of the county, some on quite high ground as near The Howe on the Soonhope Burn 55 at 300m. These may be more or less casual occurrences, or colonisation in areas where the soil is only very locally suitable.

No recent trends are evident as the historical record is inadequate.

Lathraea clandestina Purple Toothwort

Woodland, neophyte

Berwickshire 1987-2013	3 sites	1% tetrads	9% hectads
Britain 1987-1999		0.2% tetrads	3% hectads



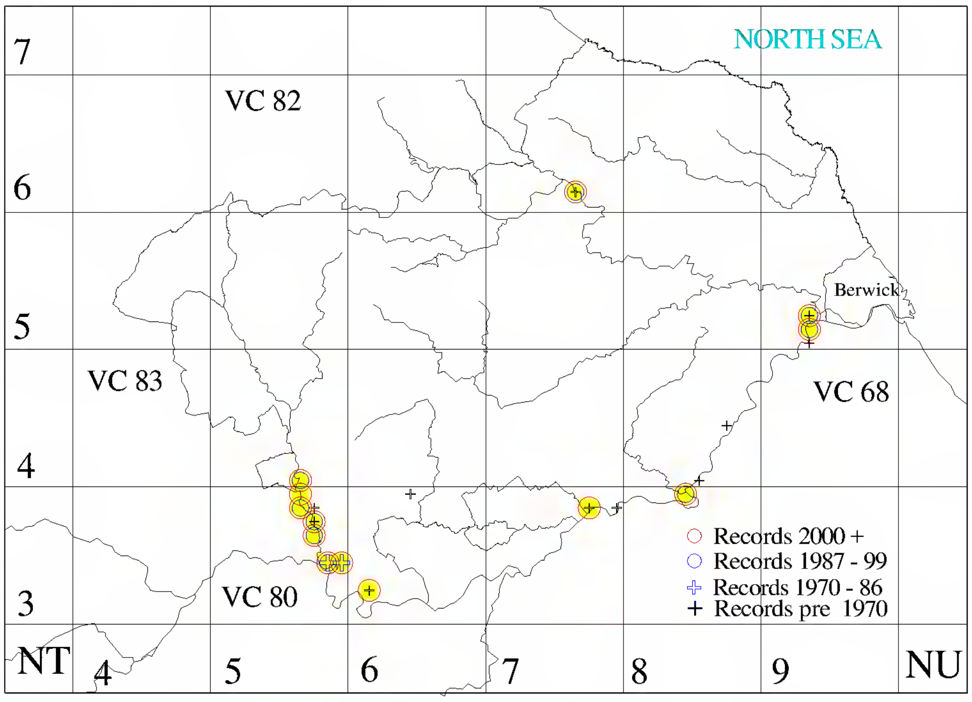
Lathraea clandestina is a root parasite on a variety of trees. It is native in Europe but is a naturalised garden introduction in Britain where it gradually becoming more frequent. It is most often found at watersides on alder, willow or poplar.

It has been known in Berwickshire since 1962, naturalised on elm and hazel by the Hen Poo at Duns Castle 75. More recently it has been found on willow in at least three places by the River Tweed near Dryburgh 53. It is also known upstream in Roxburghshire and seed has clearly been dispersed by floods. It was introduced to the garden at Glendearg Farm NT53, where it was recorded in 1979 under poplar, and appears to have been washed down the burn to the River Tweed.

Lathraea squamaria Toothwort

Woodland, native, rare or scarce

Berwickshire 1987-2013	11¼ sites	2% tetrads	30% hectads
Britain 1987-1999		2% tetrads	14% hectads



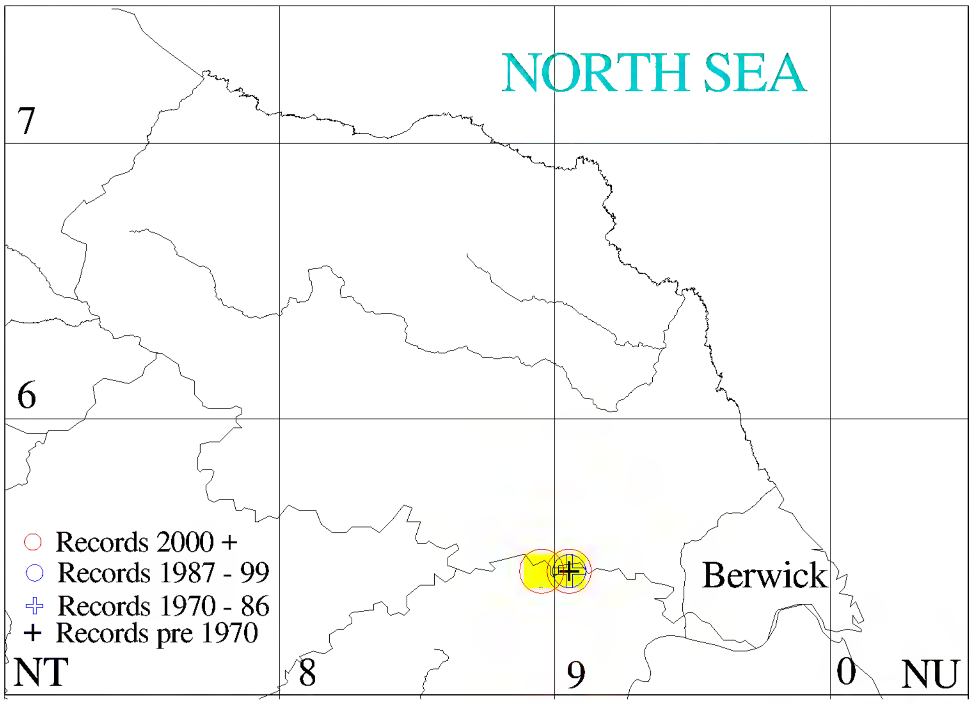
Lathraea squamaria has a scattered distribution in lowland Britain. It is parasitic on a variety of trees, here in Berwickshire typically on *Ulmus glabra* Wych Elm, *Prunus avium* Wild Cherry, *Populus* species Poplars and *Taxus baccata* Yew, but also on *Acer campestre* Field Maple, *A. pseudoplatanus* Sycamore and *Prunus laurocerasus* Cherry Laurel.

It is quite frequent in Berwickshire in woodland by the lower Leader Water 53 and on the Tweed below Leaderfoot at Gledswood 53 and Gaitheugh 53. There are just a few colonies on the lower Tweed, at Lochton 73, The Lees 83 and Paxton House 95. At Paxton House there is a splendid colony on *Taxus* near the old ice-house. There is just one colony known on the Whiteadder Water: on *Ulmus* at the turn of the river in Butterwell Wood 76. There is plenty of apparently suitable habitat downstream and it is a mystery why it has not colonised elsewhere, though its seed is not as minute as most of the *Orobanchaceae*. However this is a species that is remarkably site-faithful and most new colonies appear to be within a few hundred metres of an existing colony, particularly on steep banks where the roots of its host species may become exposed. The outlook for this species is reasonable due to its ability to colonise a variety of tree species in a parkland setting as well as in more natural woodland.

Lathyrus sylvestris Narrow-leaved Everlasting-pea

Woodland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		1% tetrads	10% hectads



Lathyrus sylvestris is a scrambling woodland-edge plant of sunny slopes in the southern half of England.

It is probably native in Berwickshire, as there is no easy explanation of how or why it could have been introduced, as the plant has no known history of medical use and is not really garden-worthy, though it climbs happily up an apple tree in our own garden at Clarilaw, Roxburghshire NT51. Its habitat in Berwickshire is typical of native populations elsewhere.

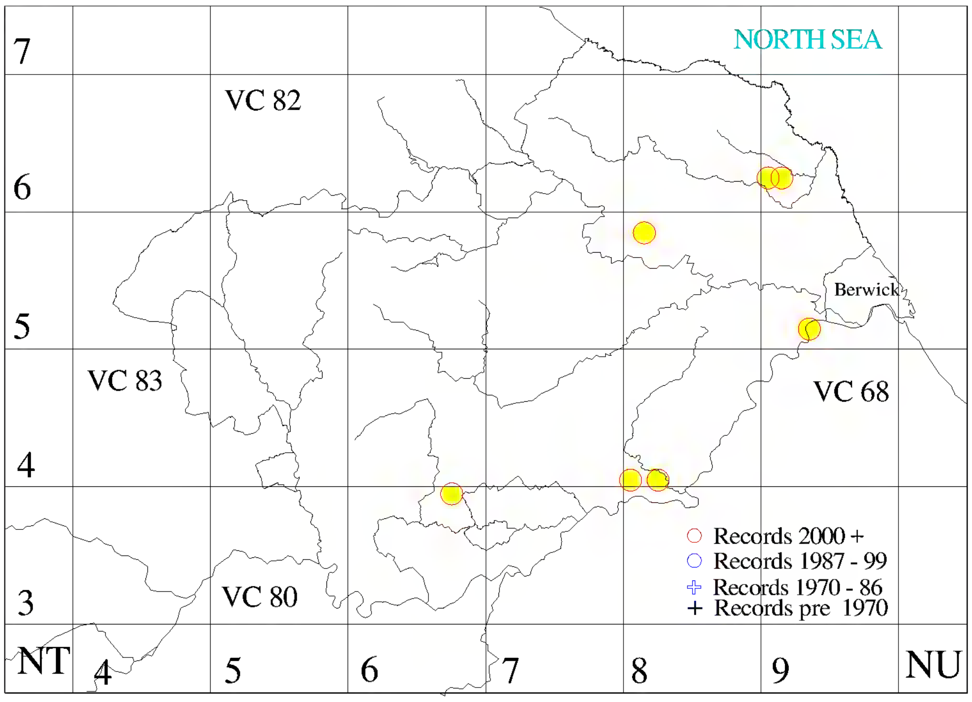
There are two colonies, one on and below sandstone cliffs by the Whiteadder Water at Harper Heugh (or Cripple Nick) 95 where it has been known since 1833 and the other in rather similar habitat not far away at Swallow Heugh 85 where it was found in 2012 (earlier botanists may have known the two sites but not have bothered to record them separately).

Arthur Smith photographing *Lathyrus sylvestris* at Cripple Nick with SWT party 1984

Lemna minuta Least Duckweed

Aquatic, neophyte, prominent neophyte

Berwickshire 1987-2013	0.6% monads	2% tetrads	22% hectads
Britain 1987-1999		8% tetrads	19% hectads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✣ Records 1970 - 86
+ Records pre 1970

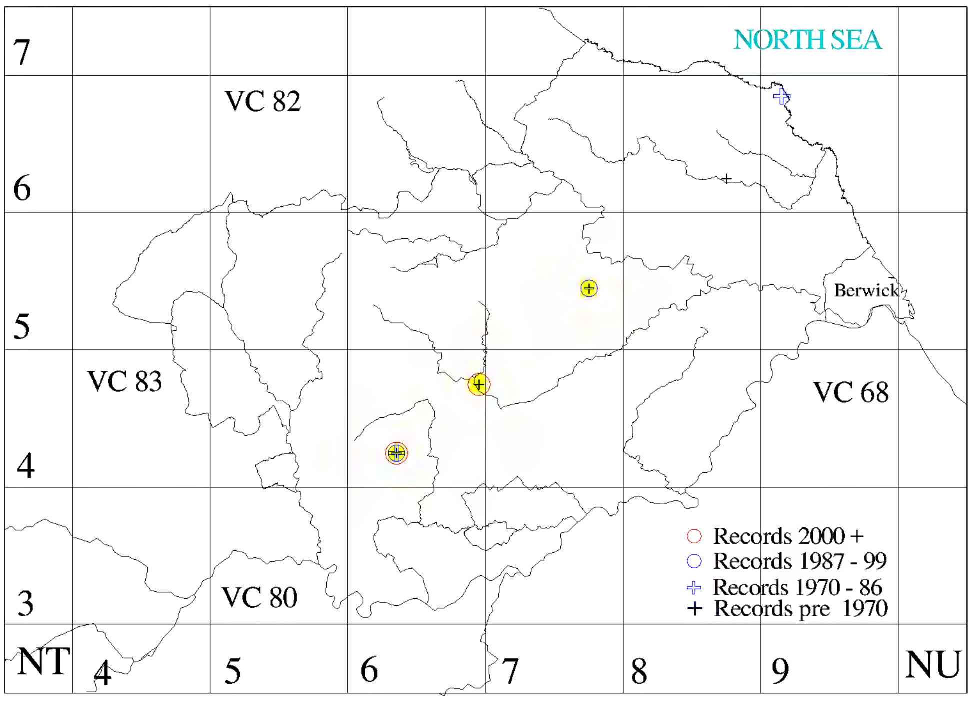
Lemna minuta was not recorded in Britain until 1977, but by 1999 it was already very widespread in southern England and has continued to spread rapidly, reaching Berwickshire by 2009. It colonises ponds in the same way *as L. minor* Common Duckweed, but tends to form a more complete carpet on the surface of the water than that species.

The Berwickshire sites are ponds by Lurgie Loch 63, at Liththillum Loch 84, in Bunkle Wood 85, at Paxton House 95 and at Mileknowe Plantation 96. There is a large colony in Hirsel Lake 84. Further colonisation is to be expected.

Lemna trisulca Ivy-leaved Duckweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	2¼ sites	0.9% tetrads	9% hectads
Britain 1987-1999		9% tetrads	30% hectads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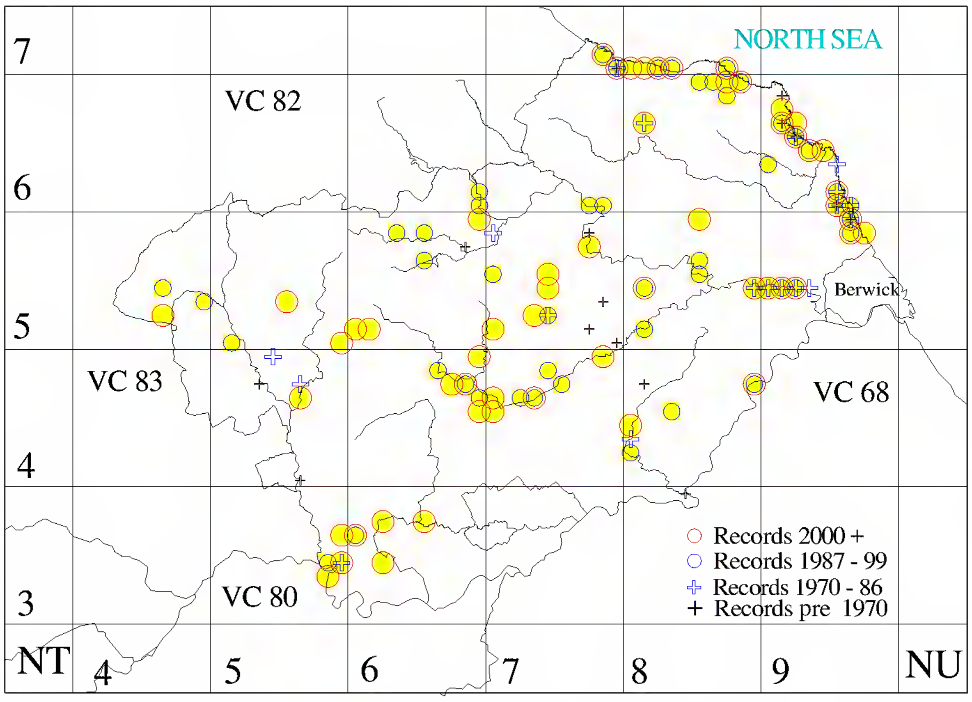
Lemna trisulca is widespread in England and in the central belt in Scotland, growing in ponds and ditches in nutrient-poor conditions.

It has always been poorly represented in Berwickshire. It grows in a few shaded pools in spring heads at Gordon Moss 64 and was found in an oxbow in Greenlaw Dean 64 in 2000. It has not been seen in the Hen Poo at Duns Castle 75 since 1997.

Leontodon hispidus Rough Hawkbit

Grassland, native, other axiophyte

Berwickshire 1987-2013	7% monads	19% tetrads	78% hectads
Britain 1987-1999		32% tetrads	52% hectads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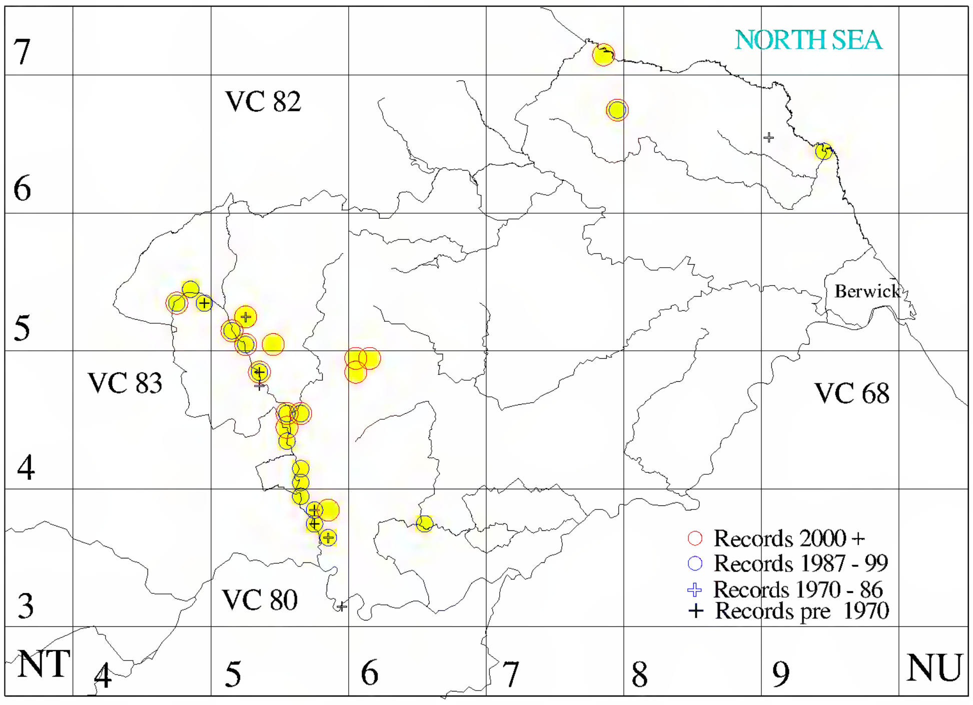
Leontodon hispidus is very widespread in England and southern Scotland in neutral or calcareous grassland. The fact that it is localised in Berwickshire at 1km scale probably owes more to agricultural improvements than to a restricted natural distribution. Today this species is most frequent on the sea braes where it favours species-rich communities on unstable calcareous slopes and similar habitat on steep slopes by the lower Whiteadder Water and the upper Blackadder Water. Elsewhere it is occasionally met with along field borders, road verges and disused railways where there is some protection from eutrophication. Some of the coastal colonies are much shorter in stature than the norm and those at Burnmouth 96 and Hilton Bay 95 have been confused with *L. saxatilis* Lesser Hawkbit in the past.

This species is probably in decline due to eutrophication of grassland but the historical record is not really adequate to evidence this. It can cope readily with changes to its unstable habitats by re-colonising newly exposed soil, but the only evidence of wider dispersal is in occasional plants found on river shingle.

Lepidium heterophyllum Smith's Pepperwort

Riverside, native

Berwickshire 1987-2013	2% monads	6% tetrads	39% hectads
Britain 1987-1999		25% tetrads	9% hectads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Lepidium heterophyllum is a plant of dry gravelly or grassy places that, rather surprisingly, is more frequent in western Britain than in the east.

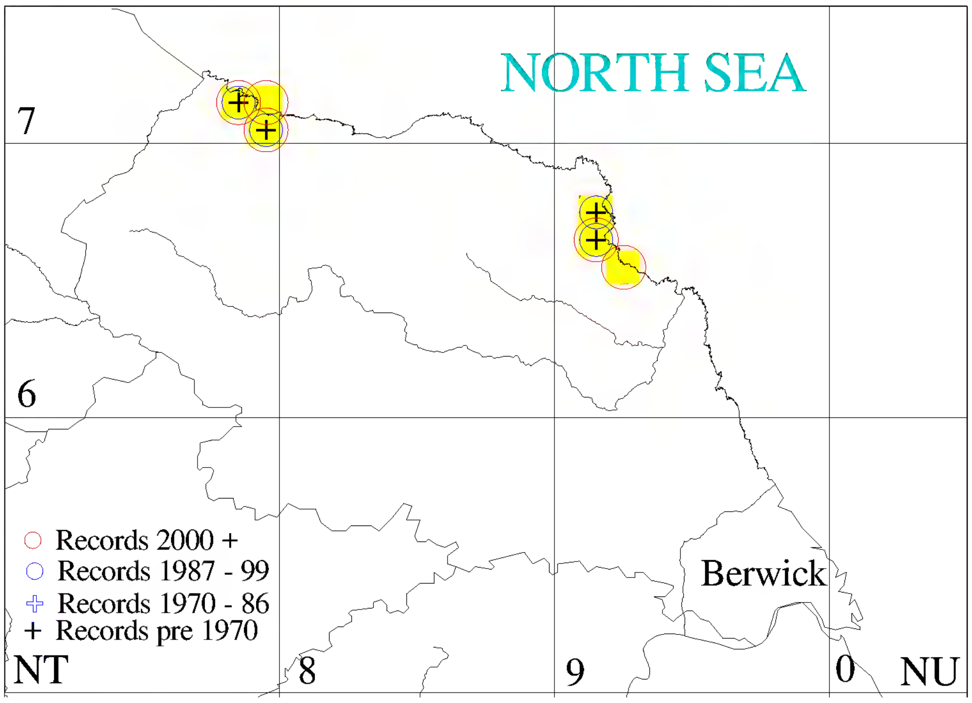
In Berwickshire it is a constant and notable feature of the gravels by the Leader Water and some of its tributaries. Elsewhere it is very scarce and more or less casual, though it has colonised forestry roads near Spottiswoode 64.

It seems debateable whether this is a native or archaeophyte species in Berwickshire.

Leymus arenarius Lyme-grass

Coast, native, rare or scarce

Berwickshire 1987-2013	4½ sites	0.9% tetrads	9% hectads
Britain 1987-1999		2% tetrads	12% hectads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Records 2000 +
Records 1987 - 99
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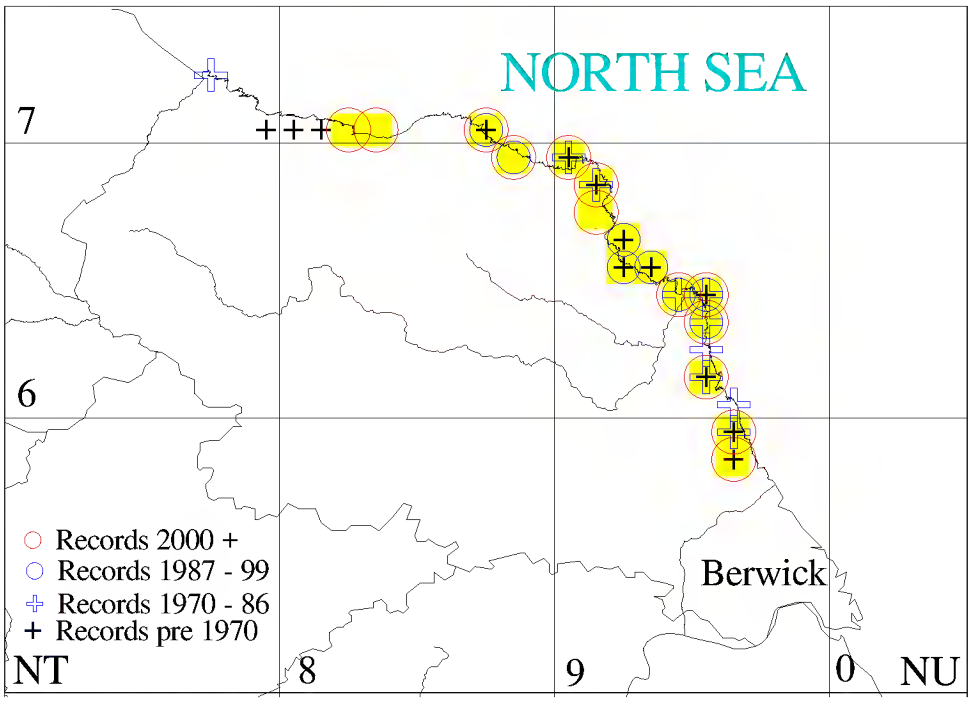
Leymus arenarius grows on coastal sand round much of the British coast but is rare on the south coast and in north-west Scotland.

It is present as a series of large clumps at the back of beaches in the few places on the Berwickshire coast where there is sand: Cove 77, Pease Bay 77, Coldingham Bay 96 and Linkim Bay 96.

Ligusticum scoticum Scots Lovage

Coast, native, Berwickshire fine

Berwickshire 1987-2013	1% monads	3% tetrads	17% hectads
Britain 1987-1999		2% tetrads	9% hectads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Ligusticum scoticum is very widespread around the Scottish coastline but only just reaches England in North Northumberland.

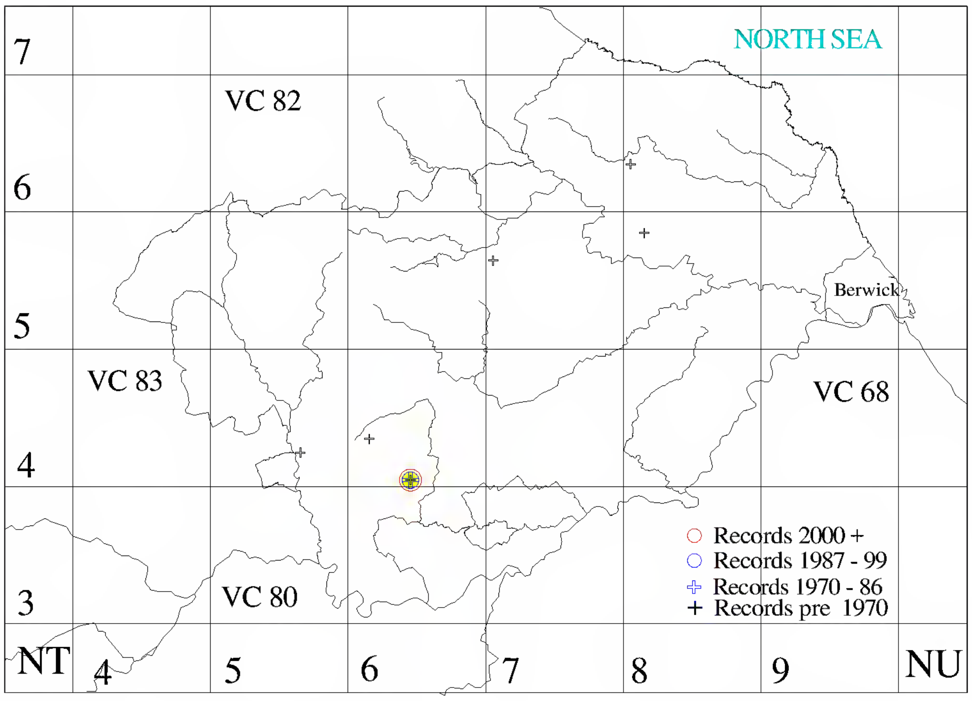
Its frequency on the Berwickshire coast is testimony to its rocky nature, for this is a plant found in rock crevices on the shore and to a lesser extent on boulder beaches. One large colony at St Abbs Head 96 extends for a considerable distance from the sea up an inaccessible slope.

Most of its colonies, particularly those on boulder beaches, are to some extent at the mercy of storms and there is evidence of local extinction and re-colonisation. It has fared better than other coastal species following the major changes brought about with the construction of the new harbour at Eyemouth 96.

Linnaea borealis Twinflower

Woodland, native, rare or scarce, British scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	1% hectads



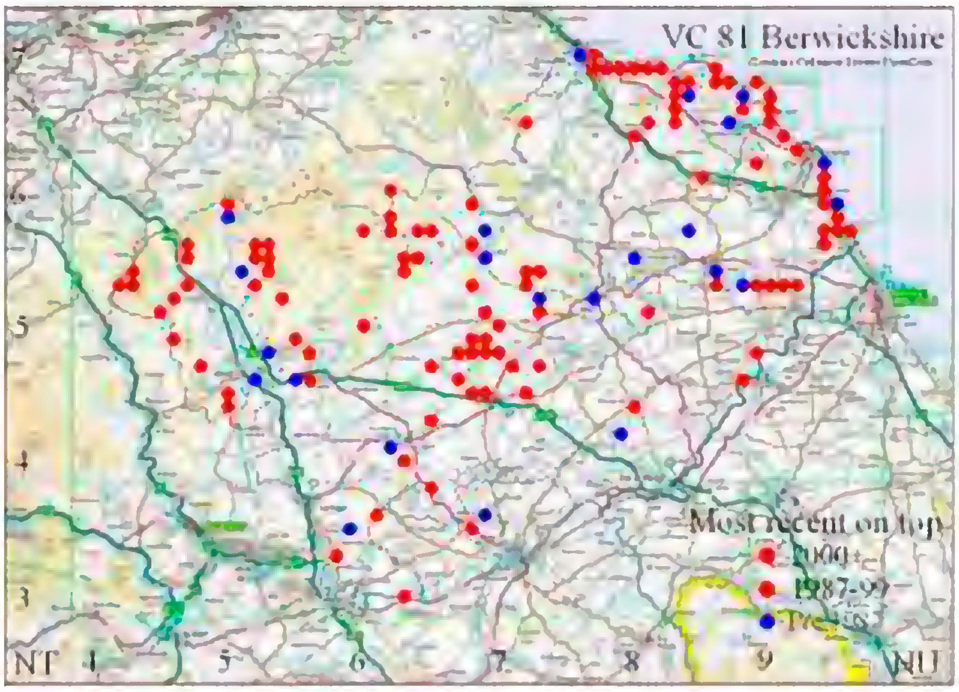
Linnaea borealis is a nationally scarce species that is very locally frequent in north-east Scotland. It is a clonal perennial of pine woods, less commonly growing under birch or amongst rocks.

It is very possibly an introduction to Berwickshire c. 1800. One colony only survives in a birchwood that is on the site of a former pine plantation in Bonarparte's Covert at Mellerstain 64 where it was first recorded 1834. The birches are ageing and an electric power line has partly opened up the canopy, but without immediate adverse effect to the *Linnaea*. The colony was measured at 80 paces in circumference in 1869, 84 paces in 1886 and 56 paces in 1988. In 1999 D Kohn and P S Lusby of the Royal Botanic Garden, Edinburgh transplanted 38 shoots from this colony within the same wood. After three years only four shoots survived and none had thrived. It is curious that no sites were chosen in more suitable habitat under pines.

Linum catharticum Fairy Flax

Grassland, native, other axiophyte

Berwickshire 1987-2013	9% monads	23% tetrads	91% hectads
Britain 1987-1999		44% tetrads	80% hectads



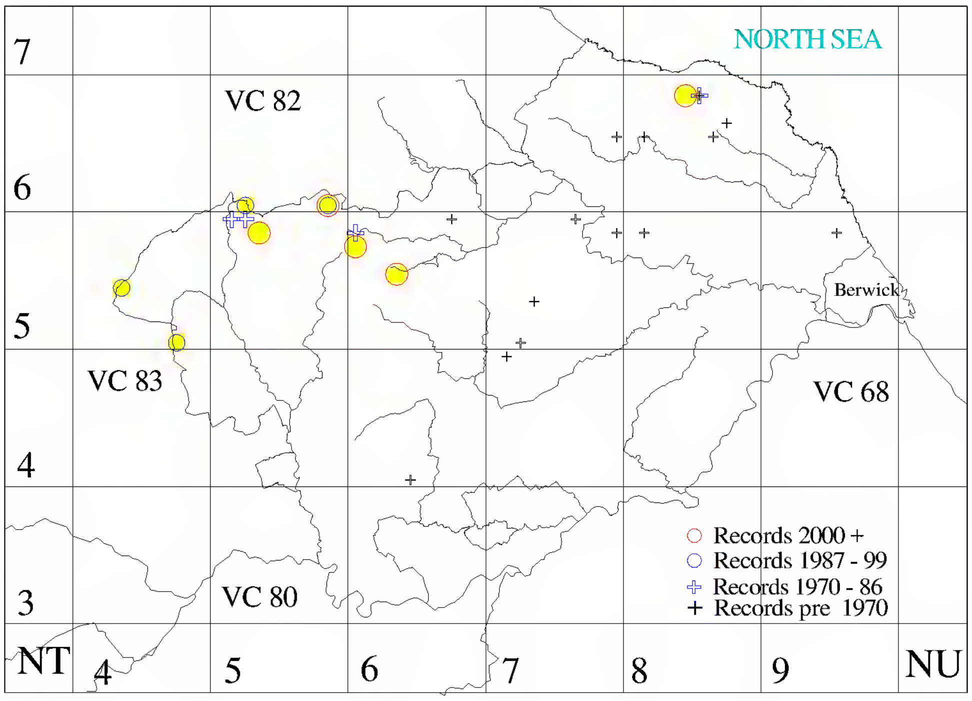
Linum catharticum is widespread throughout the British Isles. As a small plant it exploits a variety of open habitats and short turf. In Berwickshire the micro-habitats exploited are remarkably varied, ranging from steep unstable slopes on the sea braes and similar slopes inland to upland flushes and damp and mildly acidic upland turf with slight base-enrichment. It is usually a good indicator of species-rich communities. Overall there is a dichotomy between the populations on the sea braes and the braes of the lower Whiteadder Water and those in the uplands with only scattered occurrences elsewhere.

This is a persistent species with an ability to exploit habitat gaps in the sites where it is present but with little colonisation from those sites as it does not favour river gravels, road verges or, except to a minor degree, forestry tracks. There are few suitable 'brown field' industrial or commercial sites in the county, though a large colony on steep banks by the recently constructed Cockburnspath bypass 77 on the A1 trunk road may be taken as an example of colonisation.

Listera cordata (Neottia cordata) Lesser Twayblade

Moorland, native, rare or scarce

Berwickshire 1987-2013	6½ sites	2% tetrads	22% hectads
Britain 1987-1999		10% tetrads	16% hectads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+ Records pre 1970

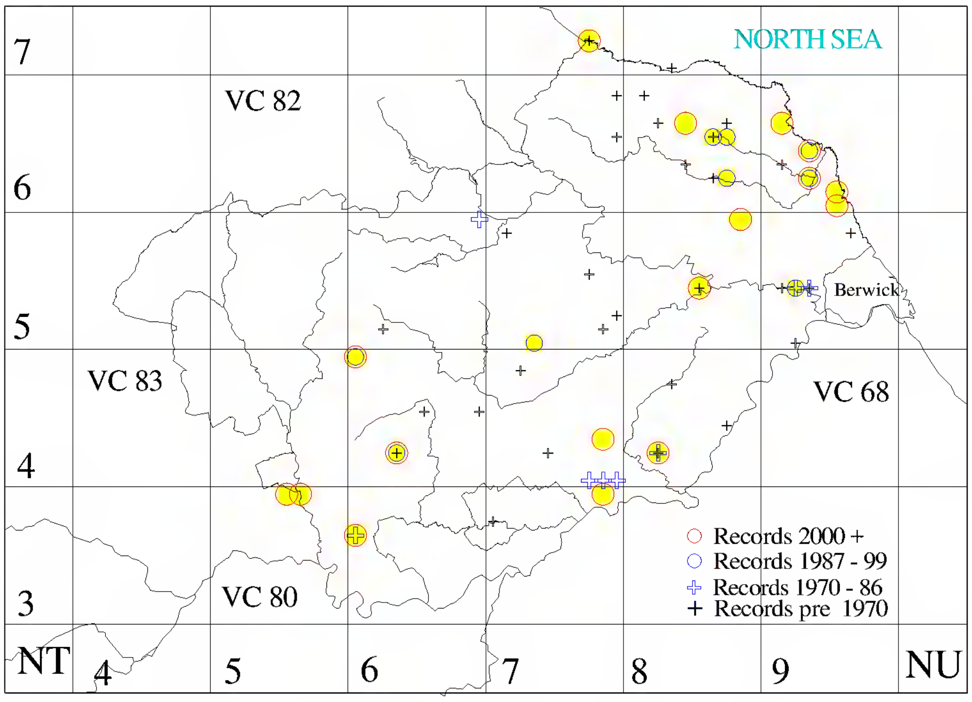
Listera cordata is quite widespread in moorland in northern Britain favouring north-facing slopes and growing in mosses, almost always *Sphagnum.*

There is little suitable habitat on the Berwickshire side of the Lammermuirs, partly because it is the drier south-side of the hills, but the multiplicity of losses suggests that muirburn has led to the progressive loss of habitat. The best of the remaining colonies may be those by the Longformacus Burn 55 and the Wester Black Burn 56. Others with recent records are in Green Cleugh 65, by the upper Watch Water 55 and at Long Moss 86. This is an elusive plant and it is probable that some colonies that were missed in the most recent survey.

Listera ovata (Neottia ovata) Common Twayblade

Woodland, native, rare or scarce

Berwickshire 1987-2013	17½ sites	5% tetrads	52% hectads
Britain 1987-1999		12% tetrads	47% hectads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✣ Records 1970 - 86
+ Records pre 1970

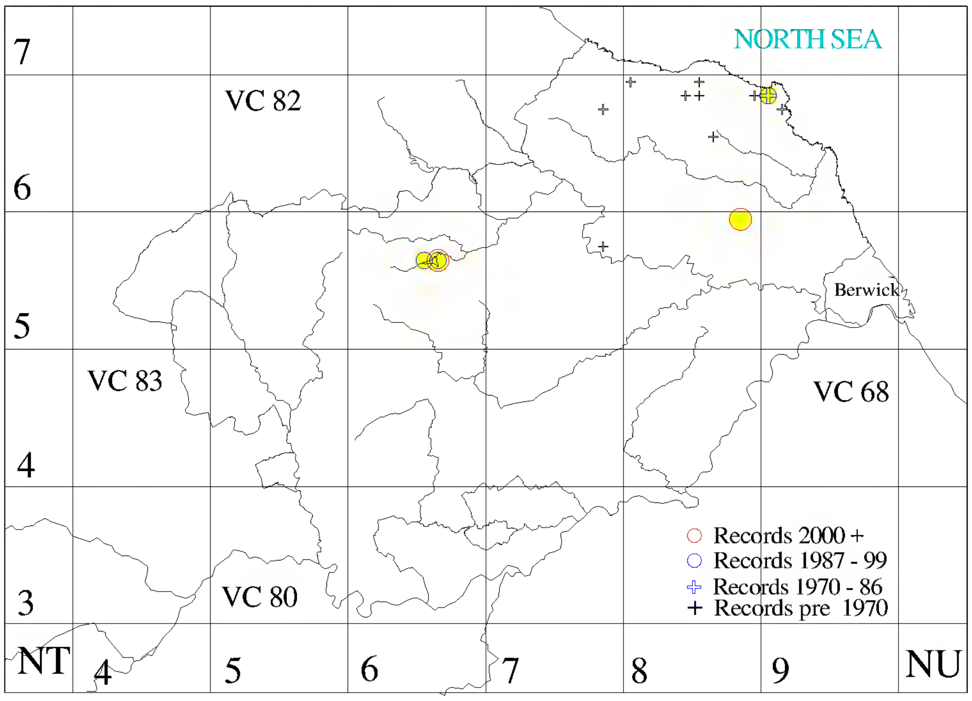
Listera ovata is widespread in Britain, especially in the south. It is an orchid of open woodland and damp grassland.

In Berwickshire the paucity of ancient woodland, other than steep deans, limits the habitat for this species. It has declined and many populations have become vulnerable, but a number of additional localities have been found recently and it is suspected that a slow cycle of local extinction and colonisation is the norm for this species. The best sites are on the east side of Redpath Moss 63, in quantity in several places in Gordon Moss 64, in an open sunny field near the foot of Dunglass Dean 77, by the Eye Water near the foot of the Ale Water 96, at the south end of Coldingham Bay 96 and on the sea braes at Killidraught Bay 96. Numbers have increased progressively in recent decades at Gordon Moss over a period when all other orchids have been declining there, testimony to its succession from wetland to woodland. Remarkably, it turned up in 1996 in a small garden at Ashdale, Reston 86.

Littorella uniflora Shoreweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	2 sites	1% tetrads	13% hectads
Britain 1987-1999		10% tetrads	34% hectads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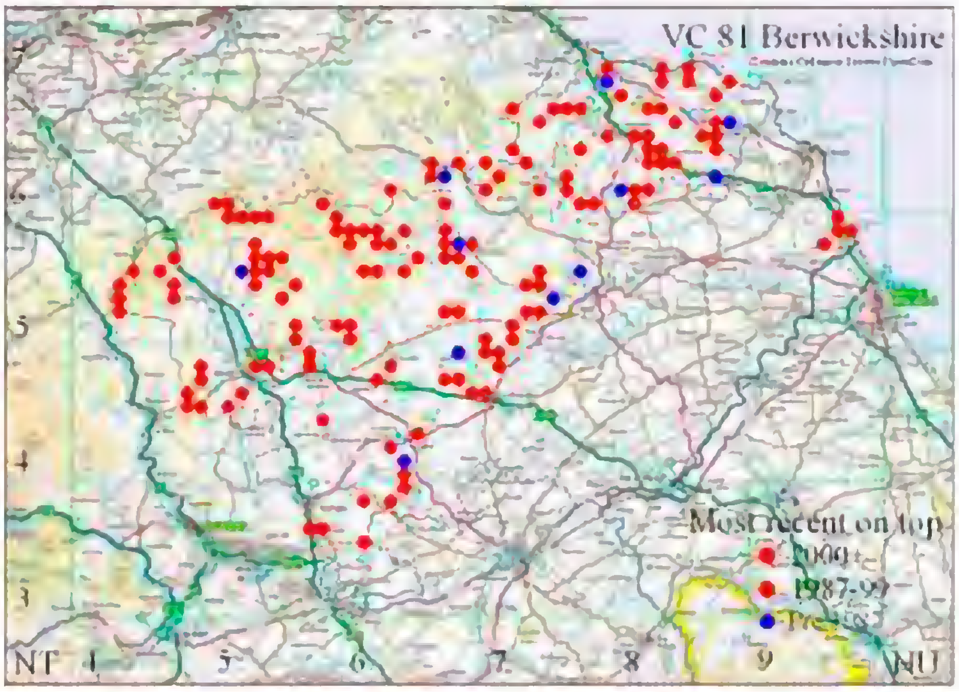
Littorella uniflora is a species of loch and reservoir margins, mainly in north and west Britain.

Berwickshire is very short of suitable water bodies but it has been lost from most of its few sites, probably as a result of eutrophication. However the margins of the Watch Water Reservoir 65 have been colonised in quantity, more than making up for the losses. It has also colonised Causewaybank Sandpit 85.

Luzula pilosa Hairy Wood-rush

Woodland, native, other axiophyte

Berwickshire 1987-2013	12% monads	30% tetrads	74% hectads
Britain 1987-1999		34% tetrads	61% hectads


VC 81 Berwickshire
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Luzula pilosa is a widespread woodland plant in Britain but is somewhat local.

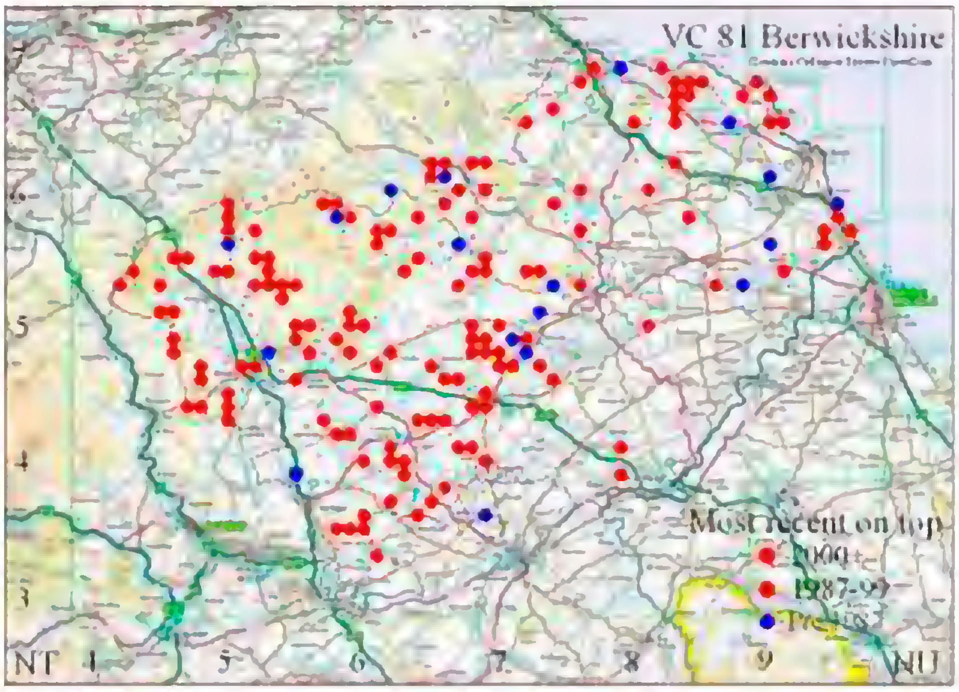
In Berwickshire it is uncommon in woodland, being more or less confined to the few native oakwoods and wholly absent from the lowlands. It is much more widespread as a moorland plant, being constant up the hill burns of the Lammermuirs and more widely, sometimes in open moorland. Recent survey has transformed the distribution map.

This is now known to be such a common plant that modest decline at 1km scale would not be observable even if the historical record was more adequate. It is presumed to be a reasonably mobile species.

Lychnis flos-cuculi (Silene flos-cuculi) Ragged-Robin

Wetland, native, other axiophyte

Berwickshire 1987-2013	13% monads	32% tetrads	87% hectads
Britain 1987-1999		45% tetrads	82% hectads



Lychnis flos-cuculi is widespread throughout Britain in fens and marshes, tolerating fairly acidic conditions.

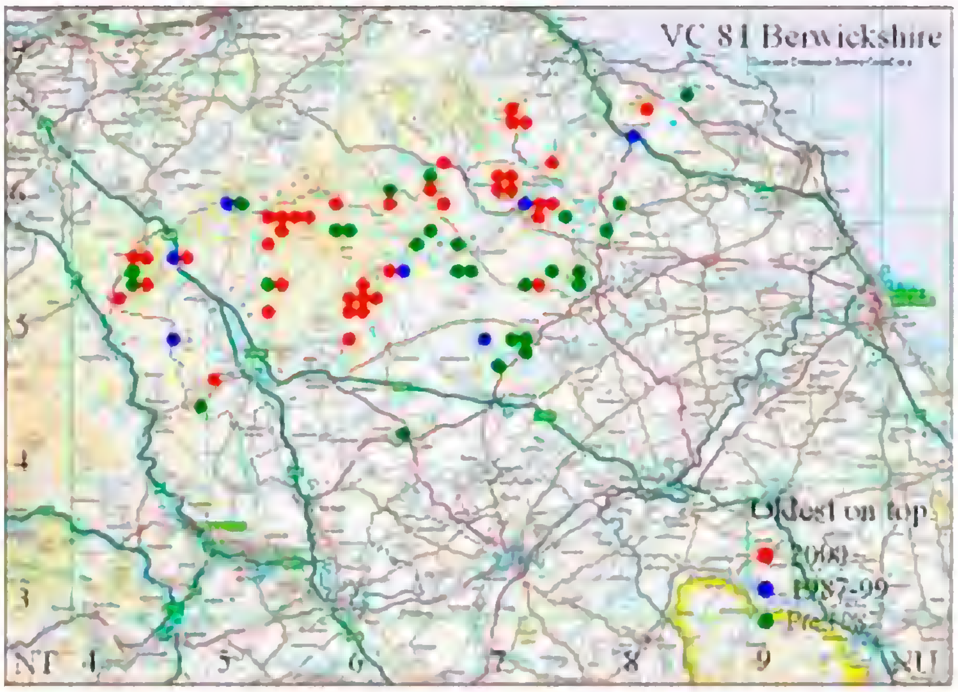
It is very widespread in the uplands of Berwickshire but scarce in the arable farming areas, particularly as it does not grow by rivers and burns as such. It is most plentiful in fens and becomes sparse in many of the upland flushes, so this is not so prominent a species as might appear from the distribution map.

The inability of this species to colonise river gravels and mud leaves it without an obvious mechanism for dispersal, other than within a site. No recent decline at 1km scale is evident from the map but many of the remaining lowland populations have become so small that some further retreat to the uplands seems likely.

Lycopodium clavatum Stag's-horn Clubmoss

Moorland, native, rare or scarce

Berwickshire 1987-2013	26¾ sites	11% tetrads	43% hectads
Britain 1987-1999		8% tetrads	17% hectads



Lycopodium clavatum is widespread in the north of Britain, usually on moorland and less often on mossy woodland banks.

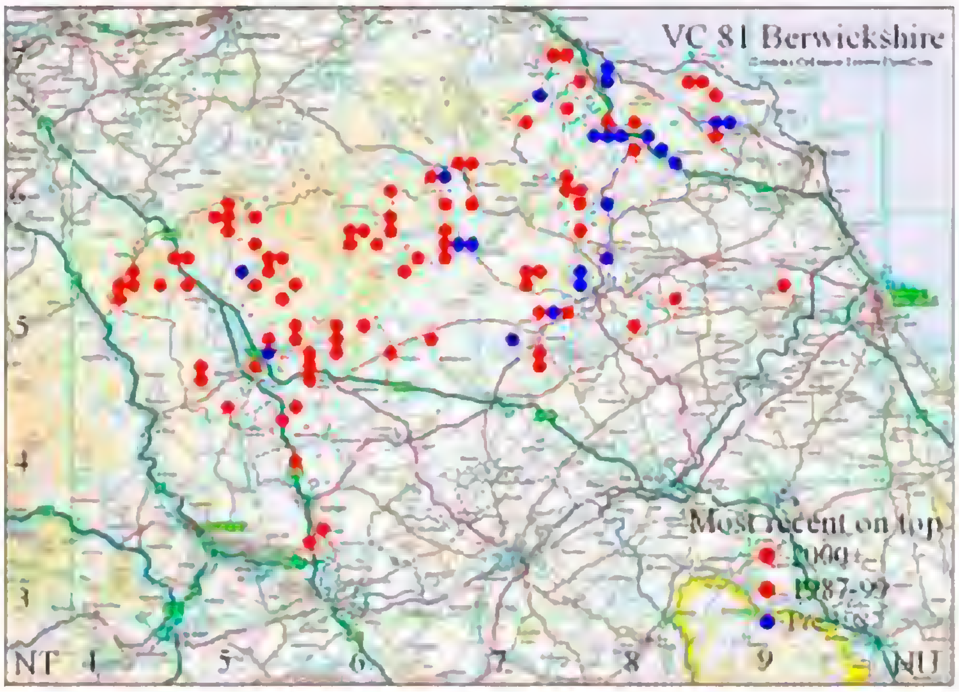
By 2000 it had become very scarce in Berwickshire, with just a few tiny colonies on open moorland. Since then it has made a most remarkable resurgence driven by its colonisation in abundance of the stony sides of new forestry tracks. It is particularly luxuriant and free-sporing where it can establish in the damp bottom of a well-drained ditch and then sprawl over the stony sides of the ditch. It has also colonised moorland tracks across the Lammermuirs but remains sparse on the open moor, though the spore-rain from the forestry colonies leads to occasional short-lived plants in suboptimal habitat. There is a strong possibility that the forestry colonies may be relatively short-lived as vegetation succession crowds them out, particularly where forestry operations spread soil and spoil along the tracks.

There are very large colonies in forestry at Hartside 45, Harecleugh 65, Catch Hill 76, Dunter Law 76 and Dunglass Common 76. Moorland track colonies are found near Seenes Law and the upper Dye Water 55.

Lysimachia nemorum Yellow Pimpernel

Woodland, native, other axiophyte

Berwickshire 1987-2013	7% monads	20% tetrads	70% hectads
Britain 1987-1999		45% tetrads	69% hectads


VC 81 Berwickshire
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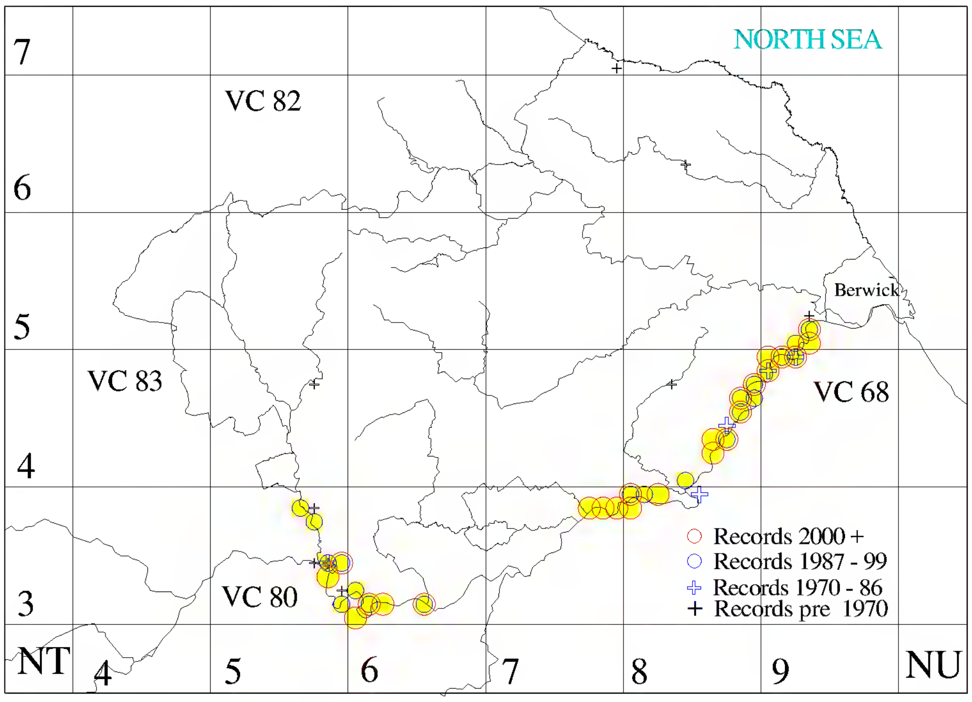
Lysimachia nemorum is widespread in Britain except in the arable heartland of East Anglia and is a predominantly woodland plant. This is not the case in Berwickshire where it is rare in the main valley woodlands and frequent up the hill burns where it is found in wet places in cleughs and by burnsides. It is sometimes associated with birchwood but more often not.

Despite the large number of recently discovered populations there is a strong suggestion of progressive decline at the fringes of its distribution, partly a reflection of the effects of eutrophication on the ground flora of woodland, especially following felling, and partly due to drainage.

Lysimachia vulgaris Yellow Loosestrife

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	3% monads	5% tetrads	30% hectads
Britain 1987-1999		8% tetrads	32% hectads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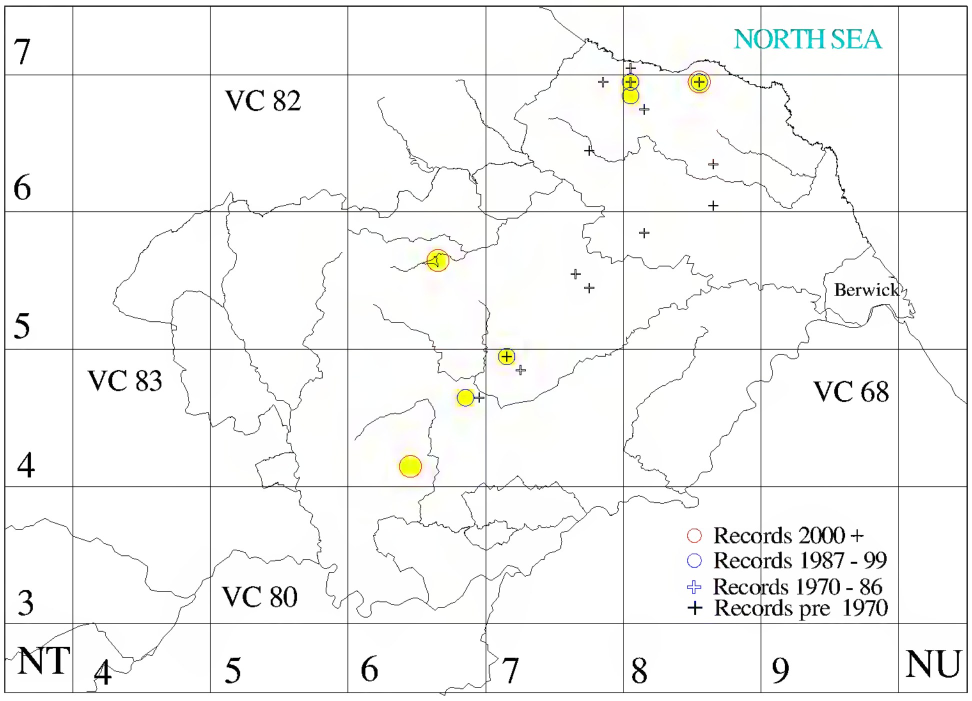
Lysimachia vulgaris is widespread in England but local in Scotland where it appears to be extending its range.

It was not recorded by the River Tweed in Berwickshire until 1911 and appears to have colonised from introductions that escaped to the Leader Water by 1902. It occurs further up the Tweed in Roxburghshire, so other points of introduction may be inferred. It is now very prominent along the riverside, forming large colonies.

Lythrum portula Water-purslane

Aquatic, native, rare or scarce

Berwickshire 1987-2013	4¼ sites	2% tetrads	17% hectads
Britain 1987-1999		10% tetrads	29% hectads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✚ Records 1970 - 86
+ Records pre 1970

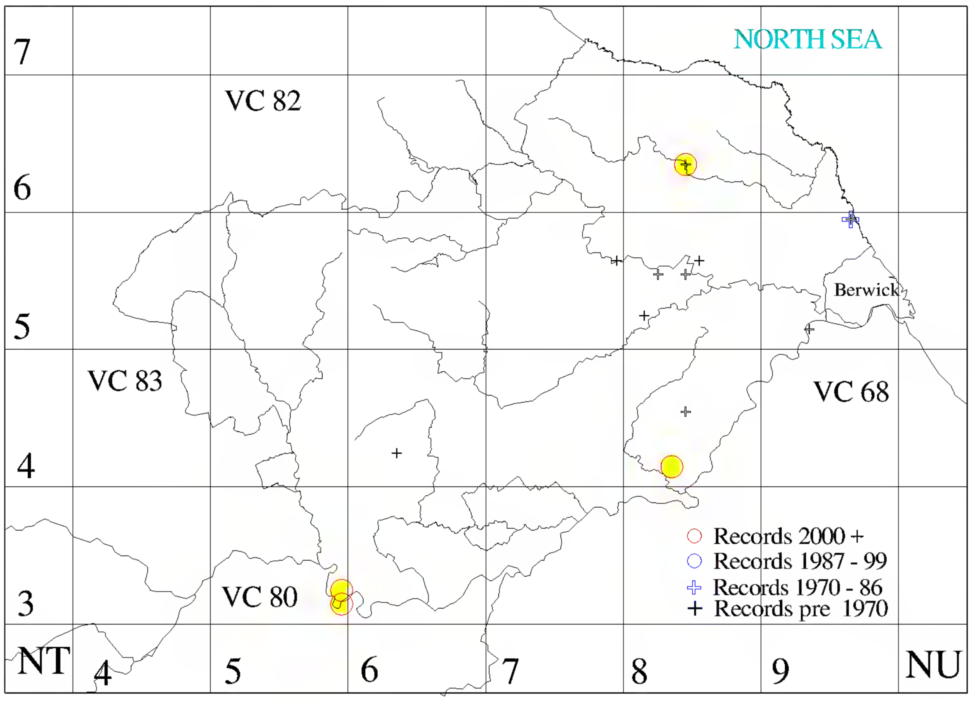
Lythrum portula is a rather local plant found mainly in south and west Britain where it colonises the muddy edges of ponds where the water table fluctuates.

It is very sparse at its few remaining sites in Berwickshire. Current fashions do not favour this species as few ponds are left open to stock. After a very wet summer, it was found in 2012 in some quantity in a series of ditches on Lightfield Moor 64. It is very scarce by the Watch Water Reservoir 65 and is still occasionally present at the pond at Lowries Knowes 86. A former stronghold at Old Cambus Townhead 86 has been lost, at least for the present, by the exclusion of cattle from the pond margin.

Lythrum salicaria Purple-loosestrife

Wetland, extinct native, sown and naturalised, former rare or scarce

Berwickshire 1987-2013	0+2 sites	1% tetrads	13% hectads
Britain 1987-1999		23% tetrads	51% hectads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✚ Records 1970 - 86
+ Records pre 1970

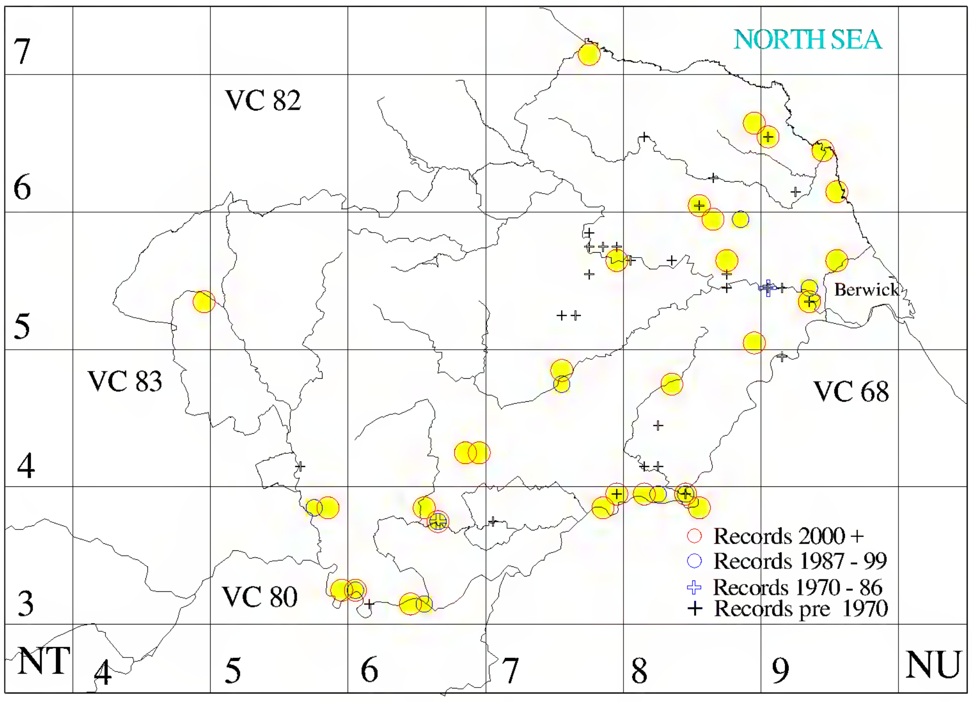
Lythrum salicaria is very widespread in wet ground in the south and west of Britain.

It had become extinct in Berwickshire but has now been reintroduced. In 2007 it was found naturalised in an oxbow channel by the Tweed below Dryburgh 53 and in 2011 by the Eye Water at Houndwood 86 where it had been included in a sown wildflower mix, part of a programme to repair damage done to the environment by the dualling of a section of the A1 trunk road, and appears to have naturalised in wet ground. A single plant was found as casual garden throw-out near Coldstream 84 in 2009.

Malva moschata Musk Mallow

Grassland, native or archaeophyte, rare or scarce

Berwickshire 1987-2013	12+18 sites	8% tetrads	61% hectads
Britain 1987-1999		23% tetrads	46% hectads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✣ Records 1970 - 86
+ Records pre 1970

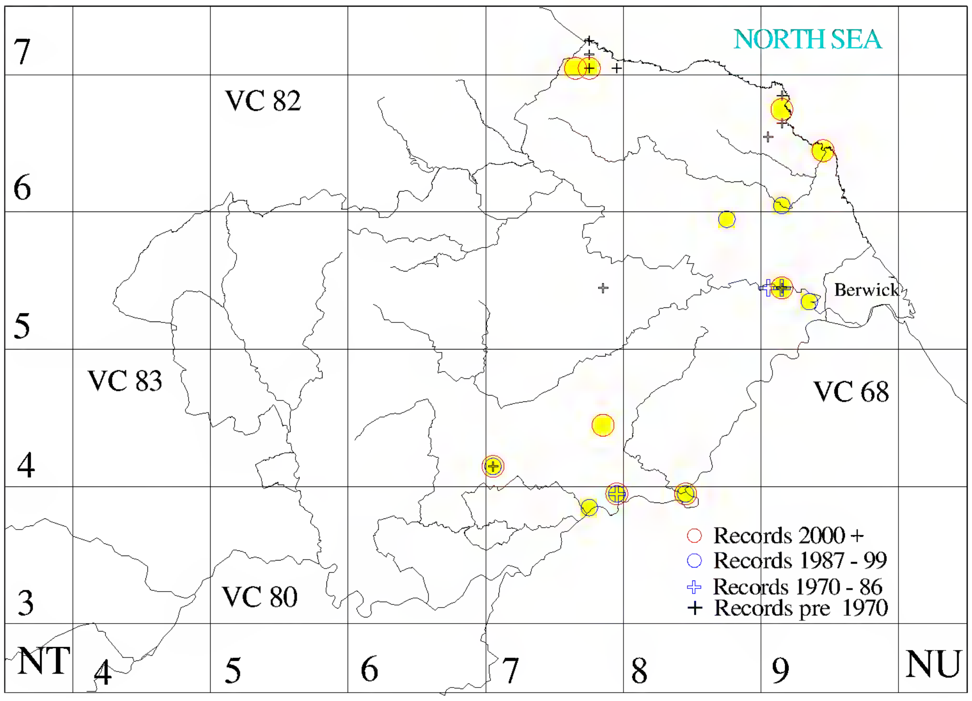
Malva moschata is a perennial of roadsides, hedgebanks and ruderal habitats that is native and widespread in much of England and Wales but local and introduced to the north.

Most of the Berwickshire colonies have the appearance of garden cast-outs or deliberate introductions, probably over a long period of time. Some of them have seeded over a modest area and have spread down rivers. The frequency of white-flowered colonies is itself suggestive of garden origin. However there is a series of colonies on eroding sandstone banks or on the lavas of the Kelso traps that may be native, in particular those above Mertoun Bridge 53, below Dalcove 63 and at Muckle Thairn 63.

Malva neglecta Dwarf Mallow

Grassland, archaeophyte, rare or scarce

Berwickshire 1987-2013	10¾ sites	3% tetrads	30% hectads
Britain 1987-1999		18% tetrads	30% hectads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○ Records 1987 - 99
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+ Records pre 1970

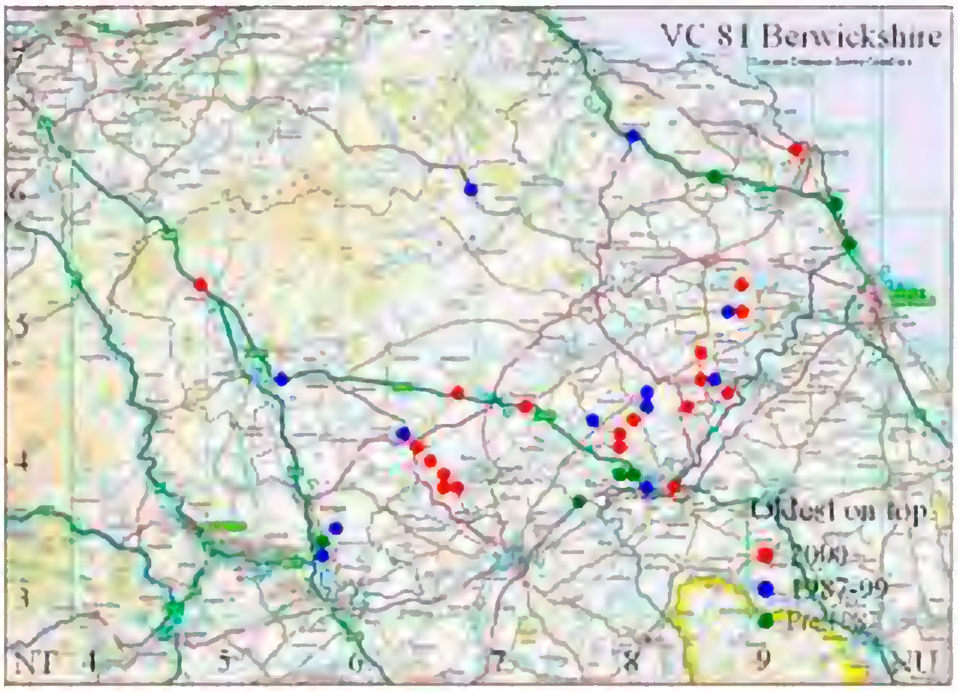
Malva neglecta is an annual of dry ruderal habitats that is widespread in England except in the west but local and eastern in Scotland.

The Berwickshire colonies are all near habitation, though some are quite extensive and occupy relatively natural grassland habitat. The main sites are in rocky grassland at the foot of the old walls of Hume Castle 74, in a lane at Birgham 73, on a roadside bank at Cockburnspath 77, below a wall by the Tweed at Coldstream 83, by Edrington Castle 95, by the Victoria Bridge near Ayton 96 and in St Abbs village 96 and Eyemouth 96.

Matricaria recutita (M. chamomilla) Scented Mayweed

Arable, archaeophyte

Berwickshire 1987-2013	3% monads	8% tetrads	52% hectads
Britain 1987-1999		48% tetrads	40% hectads



Matricaria recutita is an arable weed that is very widespread in most of England but scarce in Scotland. It has been increasing in recent decades. One factor in its increase has been a fashion for sowing it in bulk beside new or realigned roads for a dramatic display of colour with or without mixing it with poppies.

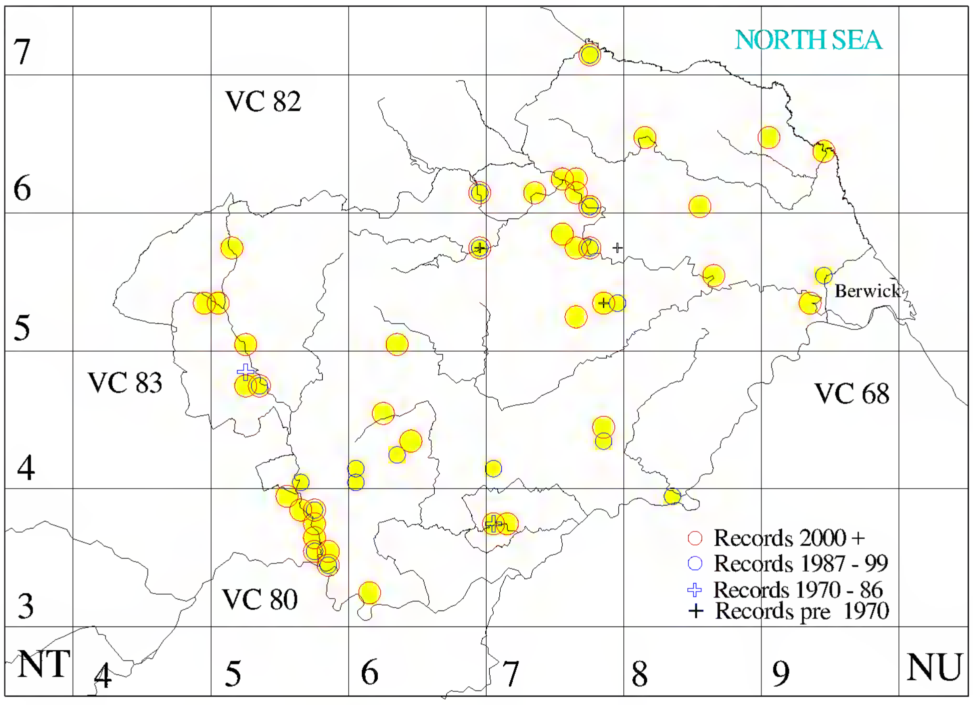
It was a very scarce plant in Berwickshire until recently but is now very locally frequent, suggesting colonisation from just a few points of introduction. There are no records of mass sowings in Berwickshire but they have been noted in Roxburghshire on the Melrose bypass NT53 and near Hawick NT51. However massive sowings during dualling of the A1 trunk road in Yorkshire could as easily have led to seed being swept up by passing vehicles and brought to Berwickshire, where a disproportionate number of the records are adjacent to main roads.

Matricaria recutita
Swinton Bridge End
1993

Meconopsis cambrica Welsh Poppy

Woodland, neophyte, prominent neophyte

Berwickshire 1987-2013	4% monads	12% tetrads	78% hectads
Britain 1987-1999		43% tetrads	23% hectads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✣ Records 1970 - 86
+ Records pre 1970

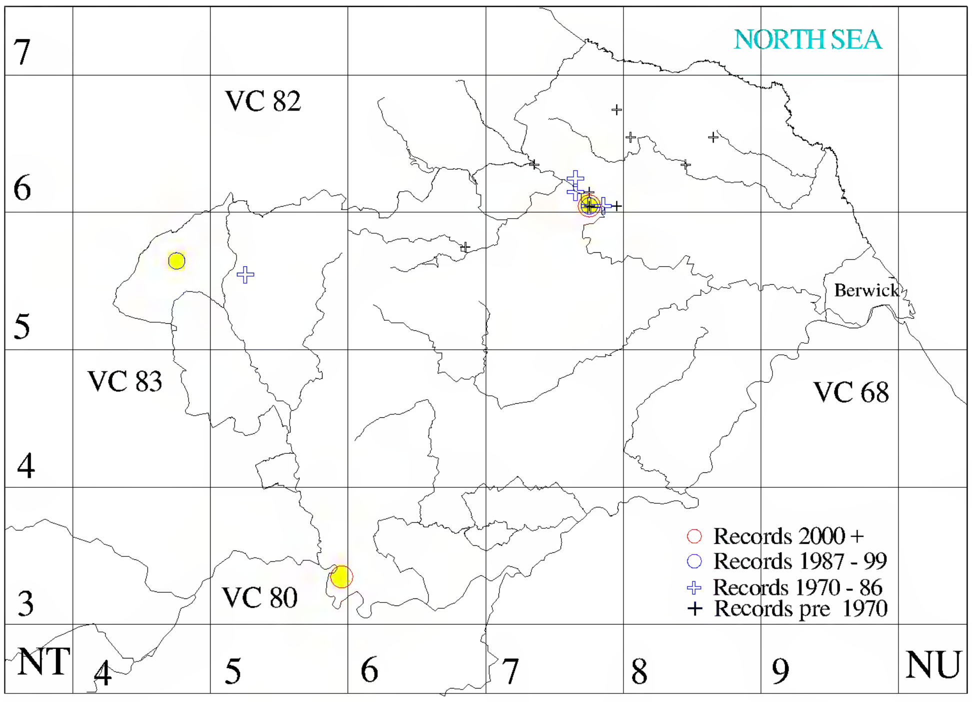
Meconopsis cambrica is a local native species of damp woodland, mostly in Wales. Elsewhere, especially in the west and north of Britain, it is a widespread naturalised garden escape.

It has become frequent in Berwickshire. While many of the records are from villages and near other habitation, it is also well-naturalised in rocky riverside woodland, especially by the lower Leader Water 53 and by the Whiteadder Water near Abbey St Bathans 76. It is almost absent from Tweedside where most of the woods are much drier. Some of the colonies are of the orange-flowered form as just south of Earlston 53, rather than the usual yellow.

Melampyrum pratense Common Cow-wheat

Woodland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.9% tetrads	13% hectads
Britain 1987-1999		17% tetrads	40% hectads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○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

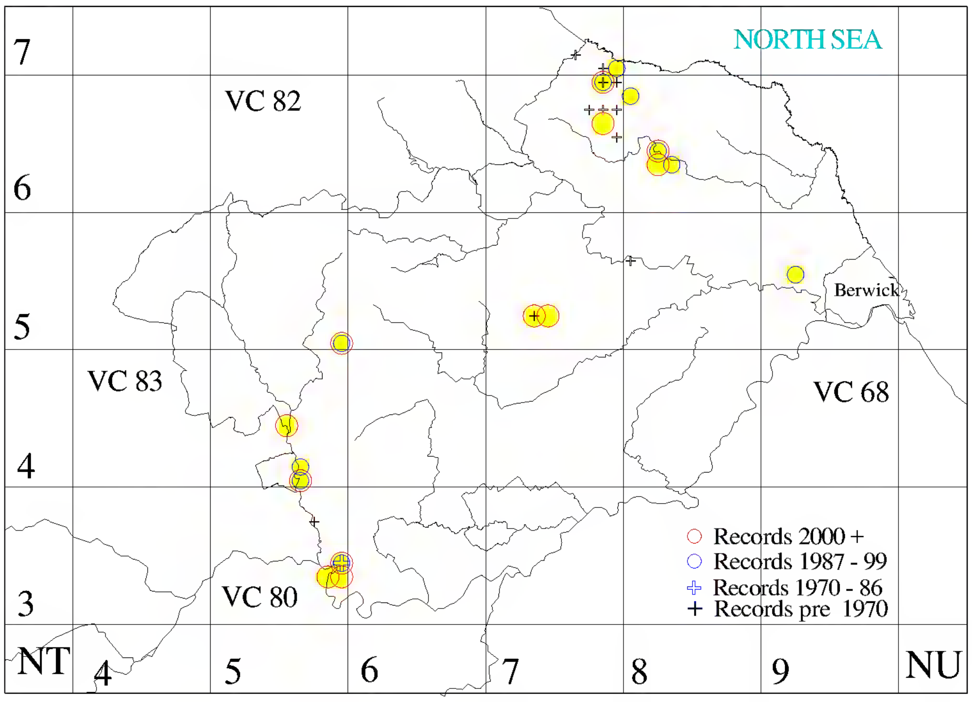
Melampyrum pratense is quite widespread in Britain but more so in the west. Its habitats are acid woodland and moorland.

It never appears to have been widespread in Berwickshire though it was not uncommon in several of the Abbey St Bathans oakwoods until recently but appears to have died out of all of them except for a modest colony in the Retreat Wood 76 where it grows with *Vaccinium myrtillus* Bilberry and *Luzula sylvatica* Great Wood-rush under oak. The losses may be due to eutrophication that has led to the spread of grasses, particularly *Holcus lanatus* Yorkshire Fog. There is one other colony, an isolated patch under the oaks at Gaitheugh 53. It has not been found in a moorland site since it was seen in heather near the juniper scrub at Headshaw Haugh 45 in 1997.

Melica uniflora Wood Melick

Woodland, native, rare or scarce

Berwickshire 1987-2013	11¾ sites	4% tetrads	35% hectads
Britain 1987-1999		20% tetrads	45% hectads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○ Records 2000 +
○ Records 1987 - 99
✣ Records 1970 - 86
+ Records pre 1970

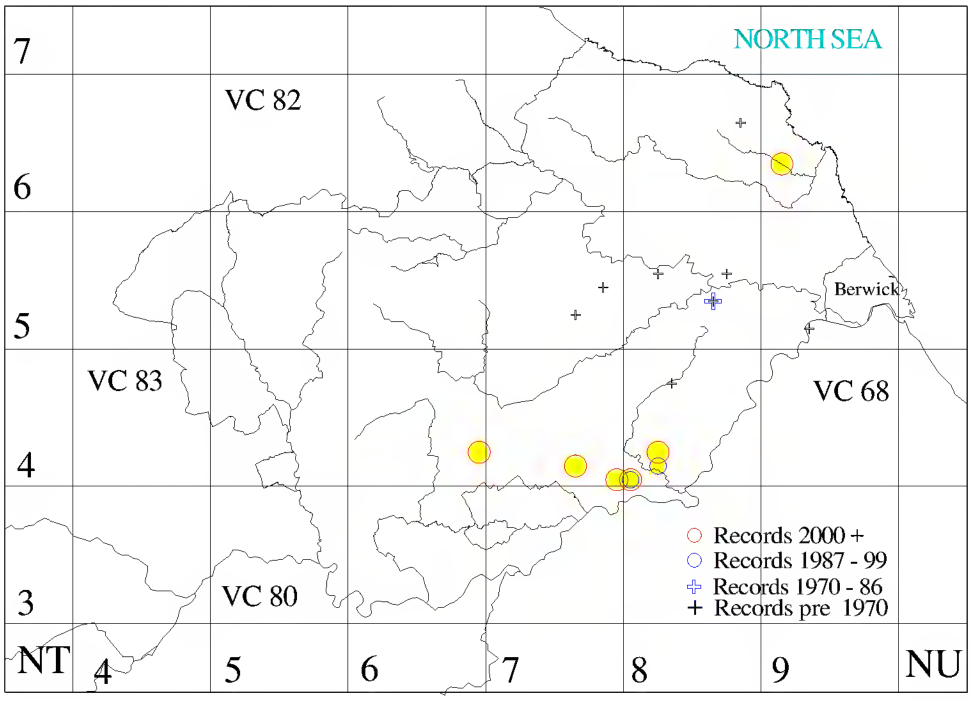
Melica uniflora is very widespread in woodland in much of England but much less so in Scotland

It is very modestly represented in a few ancient woodland sites in Berwickshire. There are several patches in the riverside woodland at Gaitheugh 53, a large colony in the burnside wood pasture at Cromwells 55 and an even more extensive one in Langtonlees Cleugh 75. Otherwise there are just tiny colonies on waterside cliffs by the Leader Water 54 and in some of the deans off the Eye Water 86 and the Pease Burn 76. It was formerly more widespread in the Penmanshiel woods 76.

Mentha arvensis Corn Mint

Arable, native, rare or scarce

Berwickshire 1987-2013	6 sites	2% tetrads	17% hectads
Britain 1987-1999		22% tetrads	46% hectads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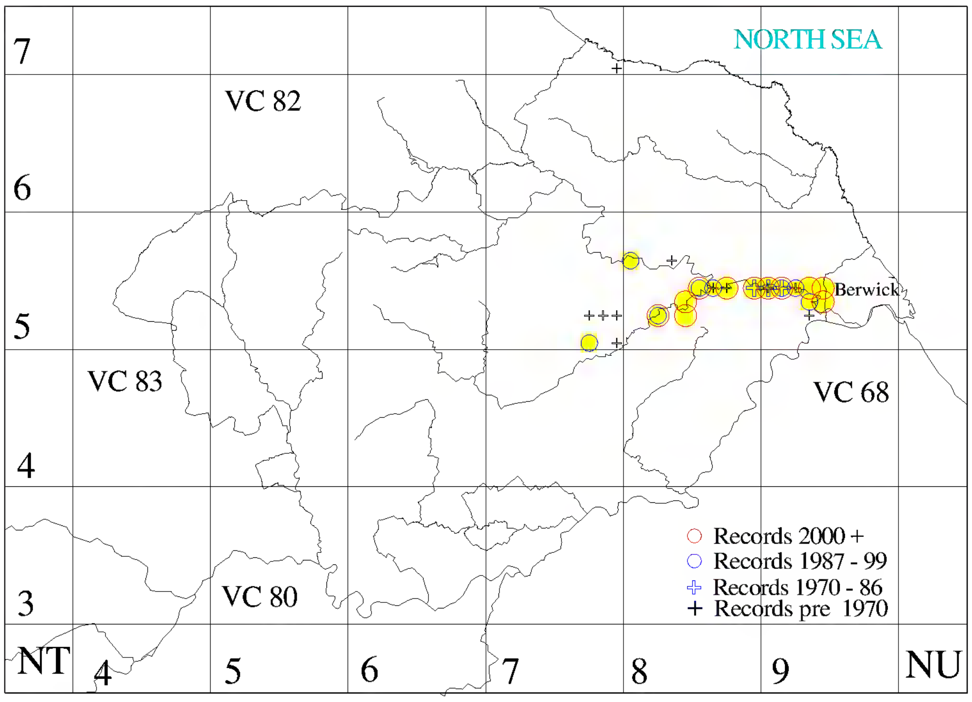
Mentha arvensis is widespread in England but more scattered in Scotland. It grows in arable fields, woodland rides and wet pasture.

This once widespread Berwickshire species has been almost eliminated from arable fields, a habitat in which it is still widespread in England. The reason for this disproportionate decline is not known. Almost all the recent records have been from damp woodland rides on sandy soil: in Birgham Wood 74, Liththillum Wood 84, Hirsel Woods 84 and Feuarsmoor Plantation 96. These populations are all quite strong ones. It has also been found in a wet field near The Bield 64 and at the foot of an old wall in Eccles 74. The last record from an arable field was near Blackadder Mount 85 in 1986.

Mentha x villosa = M. spicata x suaveolens Apple Mint

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	1% monads	3% tetrads	13% hectads
Britain 1987-1999		6% tetrads	26% hectads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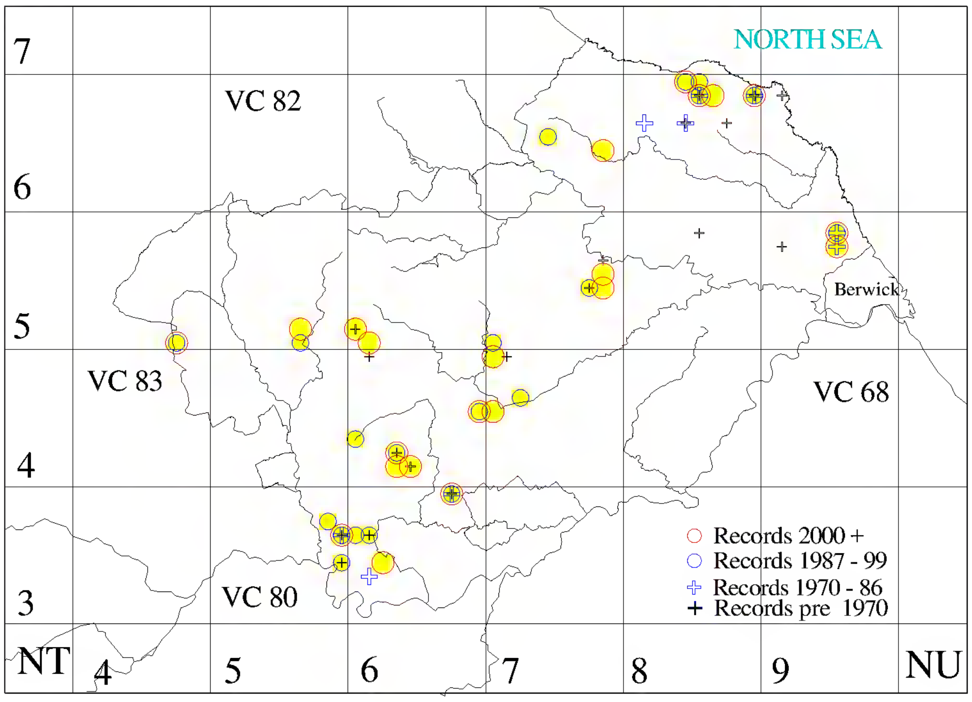
Mentha x villosa is widely but patchily distributed in lowland Britain.

In Berwickshire it is absent by the River Tweed but ubiquitous by the lower Whiteadder Water where it forms dense colonies by the river, leading me to nickname it the ‘Whiteadder Mint’. It is likely that all colonies come from a single clone.

Menyanthes trifoliata Bogbean

Wetland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	7% tetrads	48% hectads
Britain 1987-1999		21% tetrads	54% hectads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Menyanthes trifoliata is widespread but not ubiquitous in much of northern and western Britain. It is found at the margin of lochs and rivers and also in fens.

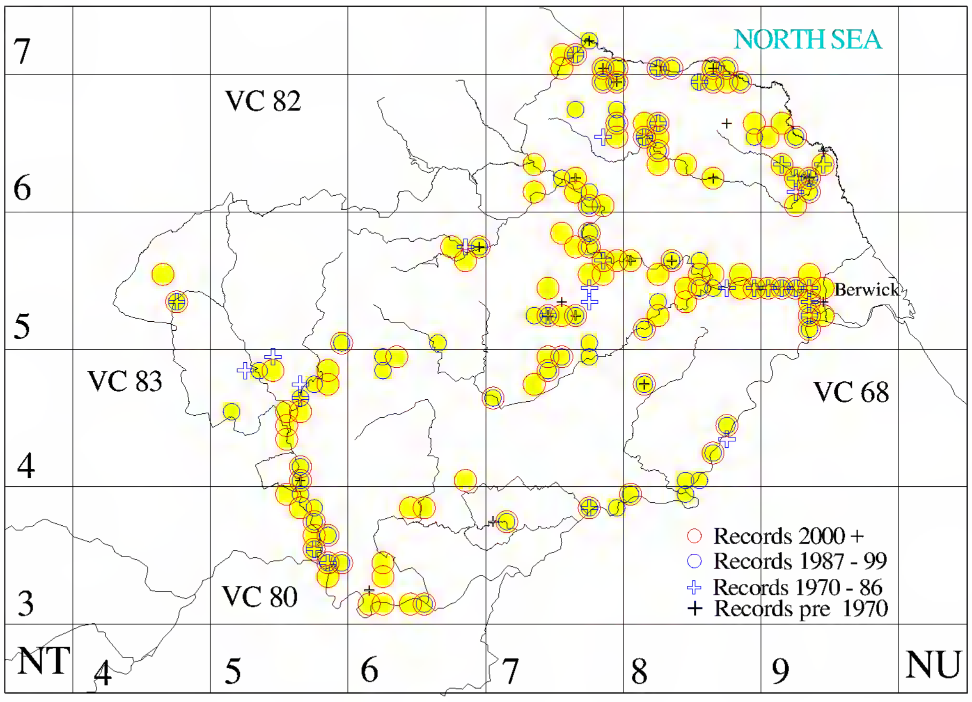
In Berwickshire the largest populations are at the margin of Coldingham Loch 86 and of the Hen Poo at Duns Castle 75. It has been successfully introduced to the recently constructed Loch Rickie at Lumsdaine 86. It is more widespread in fen habitat as at Longmuir Moss 45, Redpath Moss 53, the Gordon Moss wetlands 64, Lamberton Moor Moss 95, Dowlaw Moss 86 and some smaller wetlands.

Other than the one case of deliberate introduction, no recent colonisation has been observed, nor has there been certain evidence of recent losses.

Mercurialis perennis Dog's Mercury

Woodland, native, other axiophyte

Berwickshire 1987-2013	13% monads	31% tetrads	83% hectads
Britain 1987-1999		53% tetrads	72% hectads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Mercurialis perennis is a woodland plant that is very widespread in Britain. It is a good indicator of ancient woodland, though it also occurs in un-wooded cleughs in the uplands.

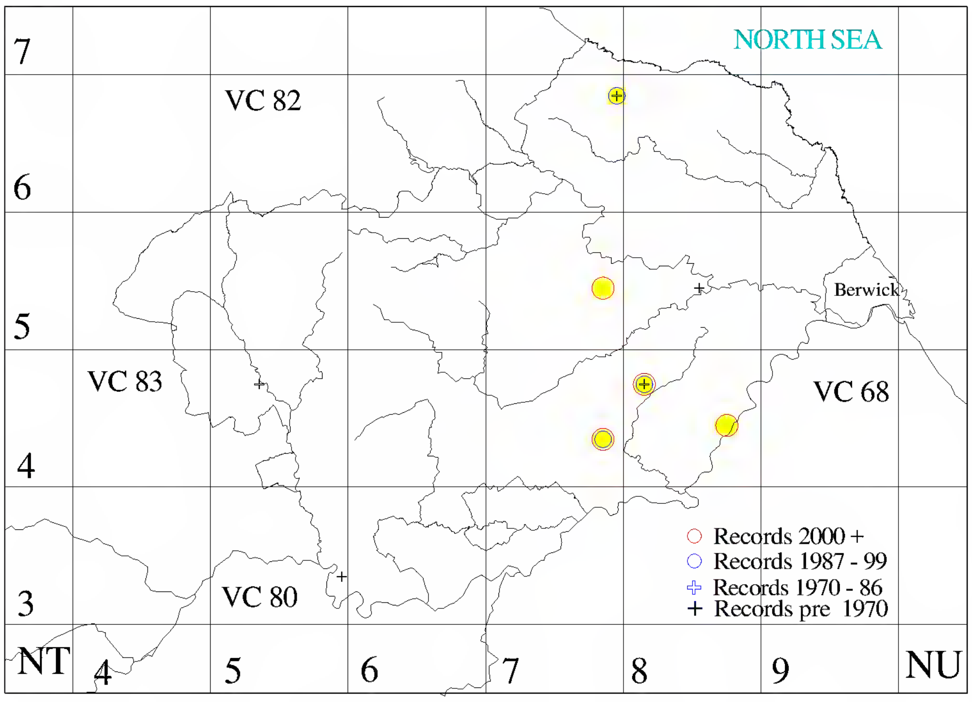
In Berwickshire it is constant throughout the riverside woodlands, but in very varying abundance. It also occurs in a few places on the coast where there are traces of former woodland or under bracken. It is rather scarce by the lower Tweed, evidence of the complete destruction of ancient woodland over a large area. There are few upland records, a tiny population on a cliff by the Raughy Burn 45 at 320m being an exception.

There is no evidence of colonisation; a small population under a beech hedge at Morven 64 was probably an accidental introduction. Any losses have been at scales finer than 1km.

Milium effusum Wood Millet

Woodland, native, rare or scarce

Berwickshire 1987-2013	1½+3 sites	2% tetrads	17% hectads
Britain 1987-1999		18% tetrads	39% hectads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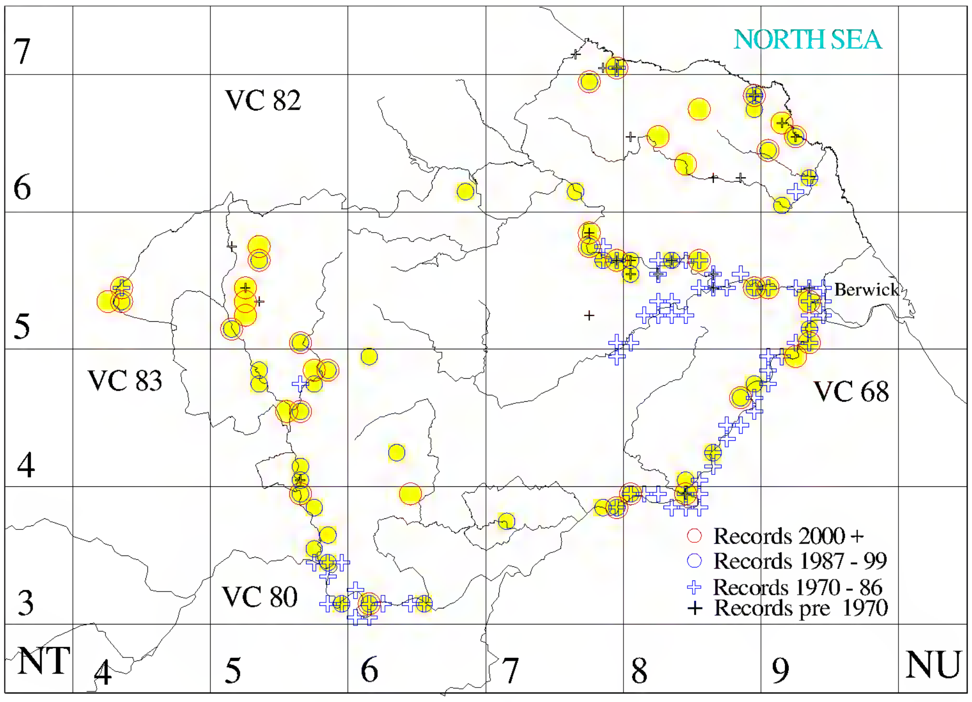
Milium effusum is widespread in England but much more local in Scotland and mainly in the central belt. It is a plant of damp woodland.

This species has been successfully introduced to policy woodlands for ornament, so it is sometimes difficult to tell whether a particular population is native or not. Probable introductions are at Anton’s Hill 74, Duns Castle 75 and Milne Graden 84, sometimes associated with *Poa nemoralis* Wood Meadow-grass, another grass that has often been sown, though it is also a native. The *Milium* at Swinton House 84 is associated with many other native woodland species and may well be native there itself. There was a small native colony in North Cleugh, Penmanshiel Wood 76 but it has not been seen there since 1989.

Mimulus guttatus Monkeyflower

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	6% monads	17% tetrads	78% hectads
Britain 1987-1999		10% tetrads	26% hectads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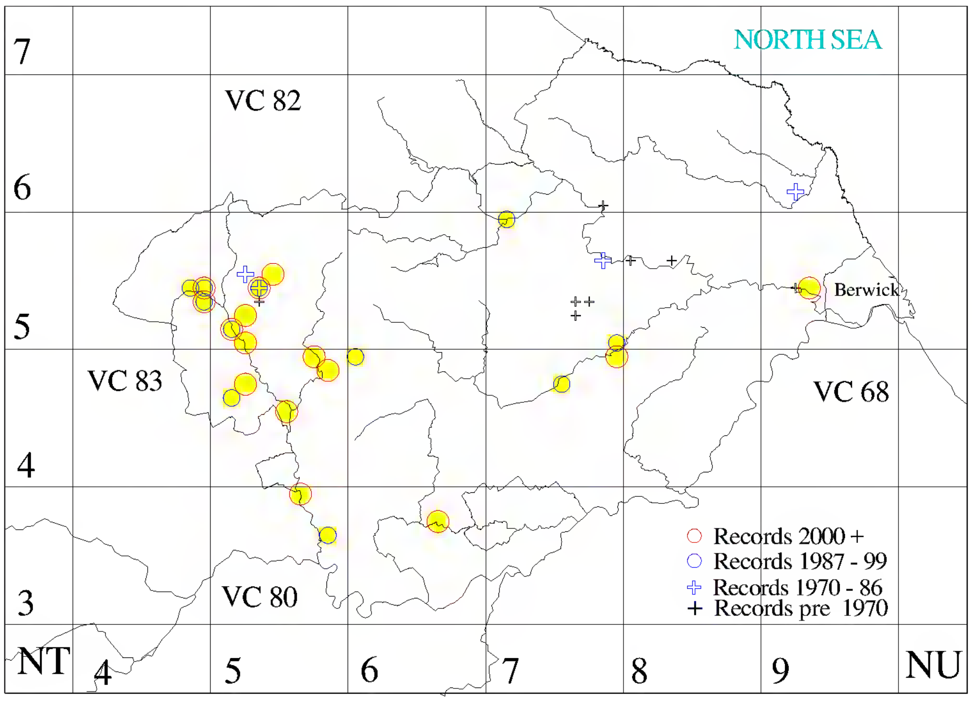
Mimulus guttatus is widely but somewhat patchily distributed in Britain, being especially frequent in eastern Scotland.

In Berwickshire it is a familiar waterside plant colonising riverside pools and oxbows, mud, gravel and rocky places. It appears to have become much less frequent in the lower reaches of the rivers since the detailed surveys by N T H Holmes in the early 1970’s, but is now better known in the upland burns where he did not survey.

Mimulus x robertsii = M. guttatus x luteus Hybrid Monkeyflower

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	2% monads	6% tetrads	39% hectads
Britain 1987-1999		2% tetrads	12% hectads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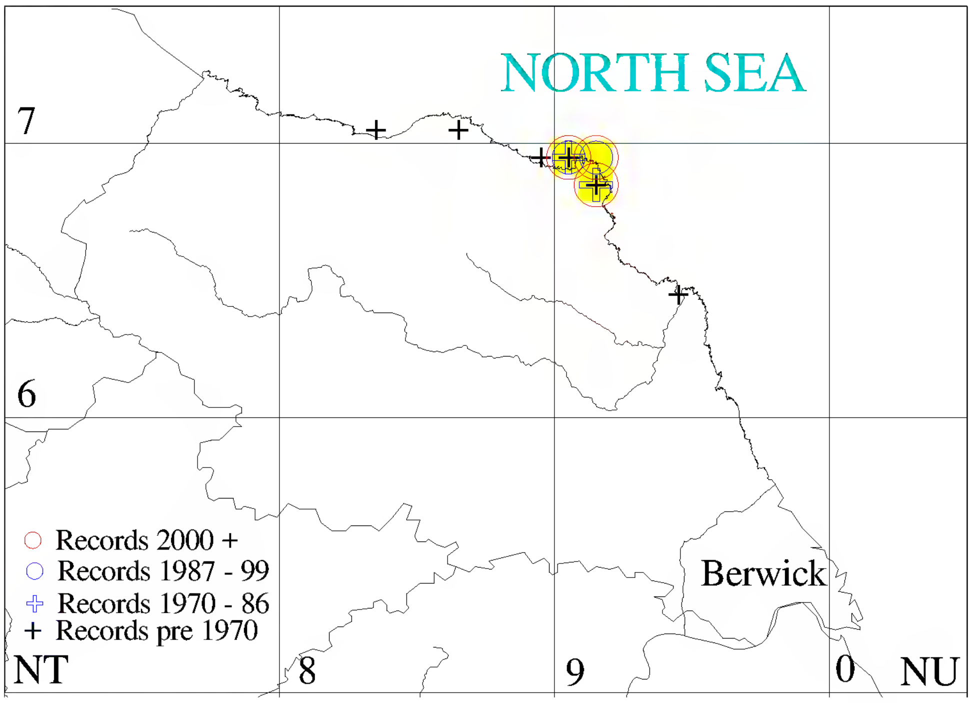
Mimulus x robertsii is much more narrowly distributed than *M. guttatus* Monkeyflower being frequent only in northern England and southern Scotland.

In Berwickshire it is frequent in the upper Leader Water and its tributary burns where it forms colourful patches around boulders which tend to out-compete *M. guttatus* in the running water. Elsewhere it is a rare plant and there are no records at all from the lower Tweed.

Minuartia verna Spring Sandwort

Grassland, native, rare or scarce, British scarce

Berwickshire 1987-2013	2 sites	0.3% tetrads	4% hectads
Britain 1987-1999		0.7% tetrads	3% hectads



Minuartia verna is very locally widespread in central northern England but rare in Scotland. It grows in short grassland and screes on limestone and rock rich in heavy metals.

It is now known in Berwickshire only from St Abbs Head 96, but was formerly at four other coastal sites. At St Abbs head there are fine colonies on the cliffs above the Petticowick Car Park and on Kirk Hill with smaller colonies at the cliff top near Nunnery Point and inland near the Lighthouse road.

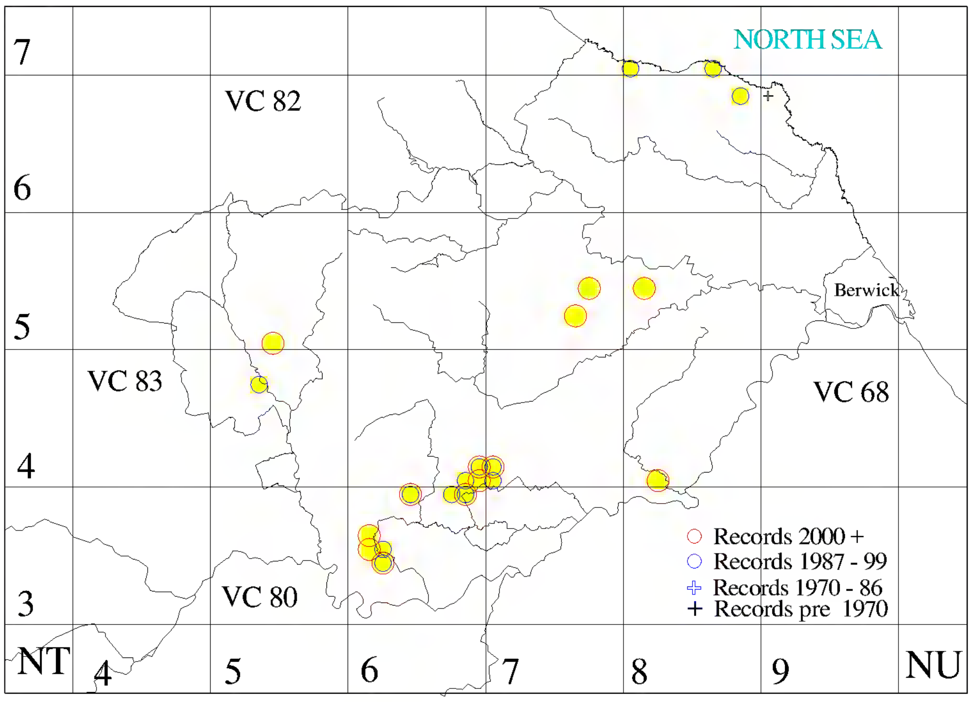
A baseline survey at St Abbs Head was made in 1994 by O J Leyshon which gave a count of 946 plants. A repeat survey in 2002 by MEB (which estimated the number of plants which were inaccessible) found the populations to be as follows: Petticowick West NT908691, 750 plants (675 count + 75 estimate), cliffs and screes above the Car Park; Petticowick East NT909690, 370 plants (320 count + 50 estimate), cliffs and screes to the southeast of the grassy slope; Kirk Hill NT915686, 50 plants (20 count + 30 estimate), cliffs and screes; Lighthouse Road NT91136915, 6 plants (count), rocky knowe; 'Minuartia Mound' NT91196925, 80 plants (count), rock and grassy ledge facing away from the sea. The total estimate for 2002 was 1,256 plants. The plants on the rock ledges are larger and appear to be much more stable in numbers than those on the talus. 409 plants (254 count + 155 estimate) were found on rock ledges and 847 (count) on talus. A further visit was made in 2006 when the only significant change was at Petticowick West where the talus slope had an exceptional number of young plants. A medium-term threat was noted from colonisation by *Sedum album* which is all-too-well established on the tallus slope at Kirk Hill.

***Minuartia verna* at Petticowick 2002**

Montia fontana subsp. chondrosperma Blinks

Grassland, native, rare or scarce

Berwickshire 1987-2013	14¼ sites	5% tetrads	43% hectads
Britain 1987-1999		2% tetrads	7% hectads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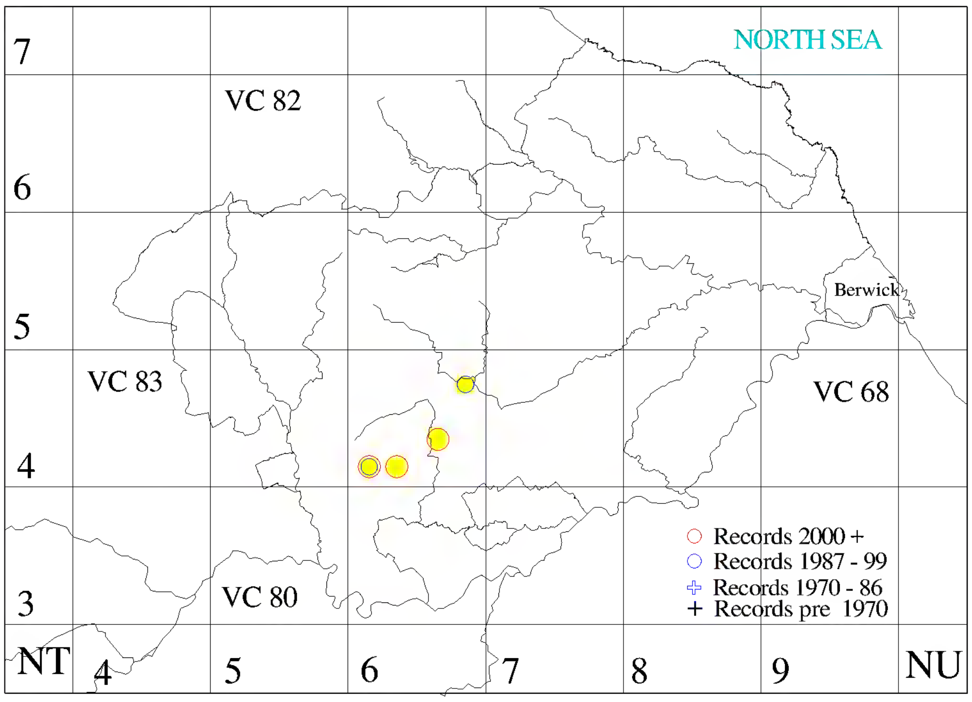
Montia fontana subsp. chondrosperma is a rather local plant in England and southern Scotland. It grows in open habitats that are damp in winter but dry out in summer.

It is well represented in Berwickshire, especially on the rocky knowes of the Kelso traps, but most colonies are small and vulnerable to eutrophication. The best colonies are at Butchercote Criags 63, Brotherstone Hill 63, Hareheugh Craigs 64 and Hume Craigs 74. It is also found on gravel paths and amongst cobbles as at Thirlestane Castle 54, Duns Castle 75, Gavinton Church 75, The Hirsel 84 and Manderston 85.

Montia fontana subsp. variabilis Blinks

Grassland, native, rare or scarce

Berwickshire 1987-2013	3½ sites	1% tetrads	4% hectads
Britain 1987-1999		0.7% tetrads	4% hectads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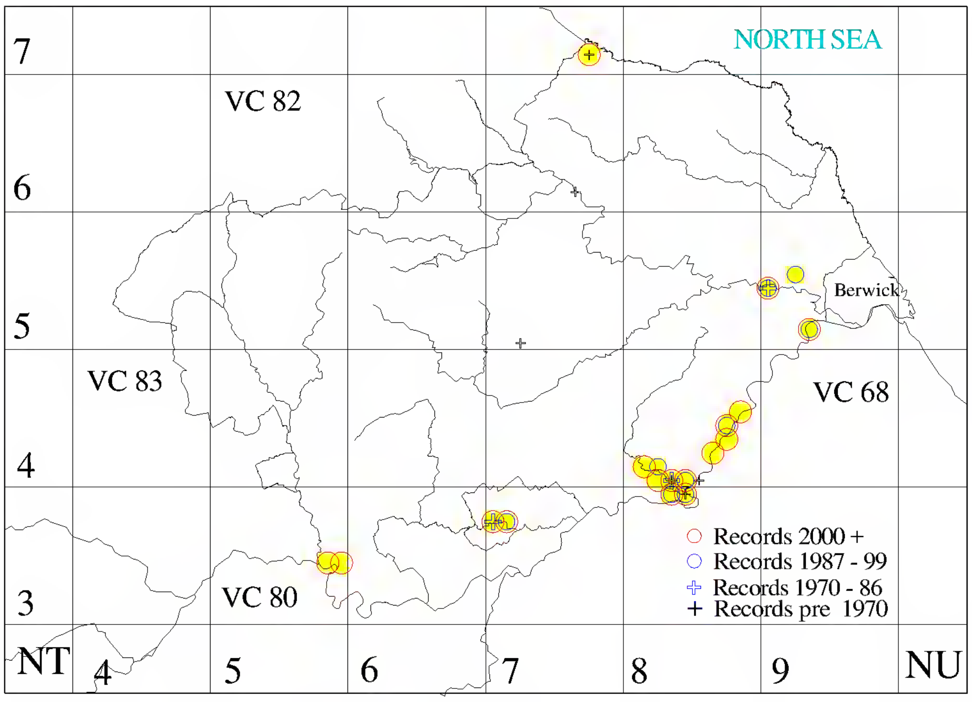
Montia fontana subsp. variabilis grows in open habitats that are more or less permanently damp. It is known mainly in the West Country, Wales, northern England and southern Scotland.

It is apparently the scarcest of the three subspecies recorded in Berwickshire and is only recorded from hectad NT64 where it has been seen in a few places around the edge of the Gordon bogs complex and in Gordon Community Woodland, mostly in wheel ruts or bare patches in grass.

Mycelis muralis Wall Lettuce

Rock, archaeophyte

Berwickshire 1987-2013	2% monads	4% tetrads	26% hectads
Britain 1987-1999		18% tetrads	39% hectads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Mycelis muralis is a widespread native species of rocky woodland in much of England but is local in Scotland where it is probably an old introduction

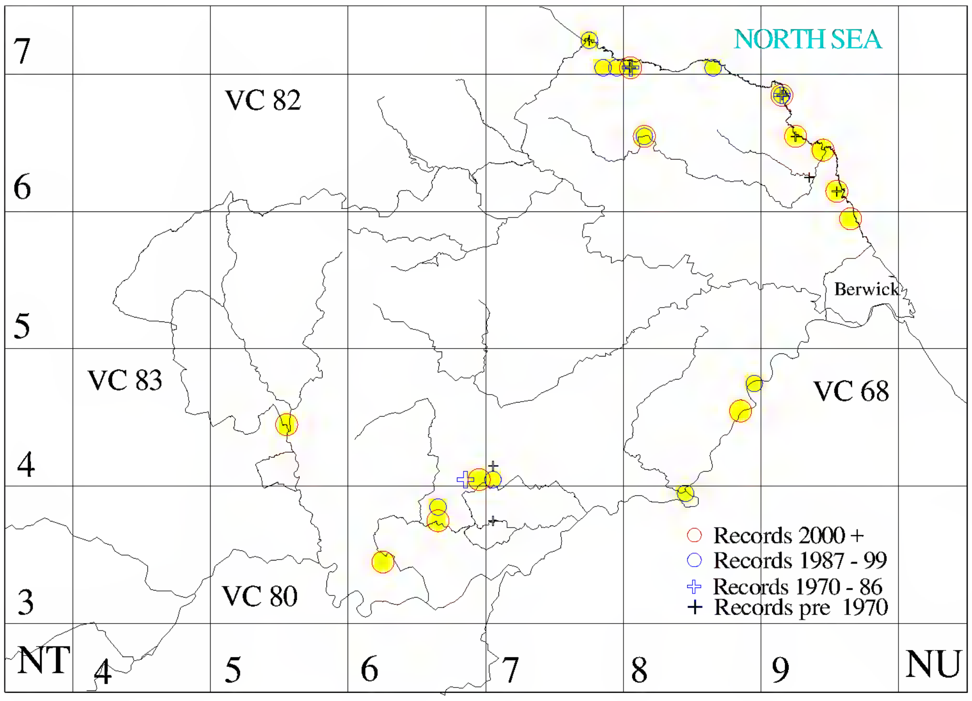
In Berwickshire it is quite plentiful on the high stone walls in Coldstream 83. It is also quite plentiful at the Hirsel 84, both on walls, including the wall of the walled kitchen garden, and in woodland nearby where it favours the shade of mature beech trees. It also occurs on walls at Newton Don 73, again including the wall of the walled kitchen garden, and on rocks near Stichill Linn in association with *Cystopteris fragilis* Brittle Bladder-fern. There are only a few other stations: at other mansion houses and on a wall at the village of Cockburnspath 77.

Of the Berwickshire habitats of *Mycelis muralis*, the only one that at all suggests native status is that by the Leet Water between the Hirsel 84 and Coldstream 83. Although the woodland there is on calciferous sandstone and has a herb layer with ancient woodland elements, it is basically a mixed plantation. It seems vastly more probable that *Mycelis muralis* has spread from the walls to the woodland than the reverse.

Myosotis ramosissima Early Forget-me-not

Grassland, native, rare or scarce

Berwickshire 1987-2013	15½ sites	5% tetrads	48% hectads
Britain 1987-1999		8% tetrads	30% hectads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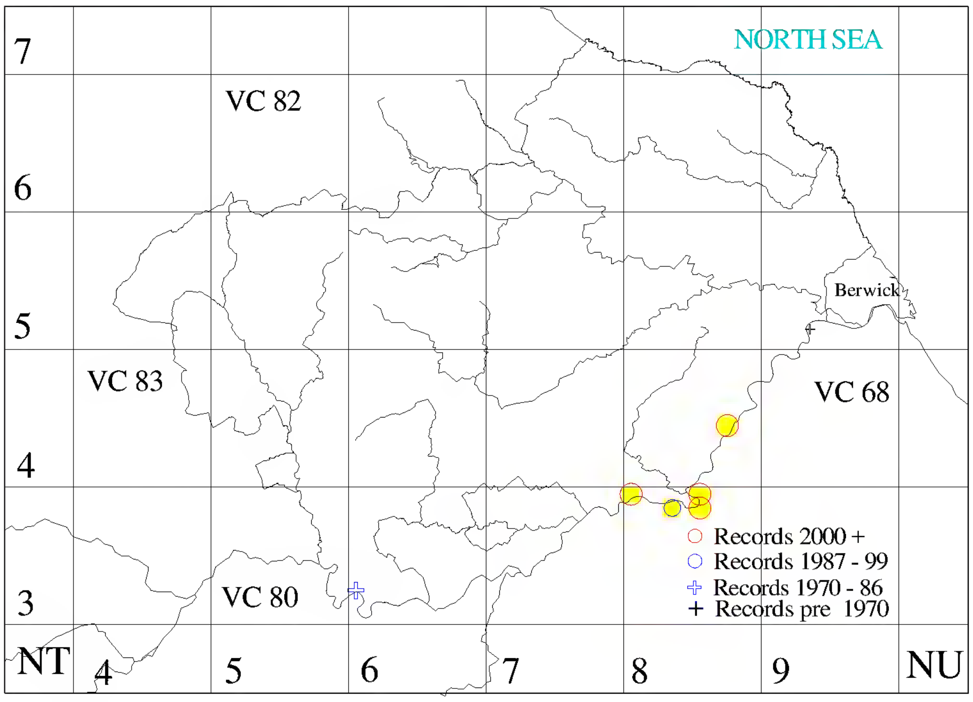
Myosotis ramosissima is a species of dry infertile open habitats in eastern and lowland Britain.

It is modestly represented in Berwickshire and thought to be declining, mainly due to eutrophication. Substantial colonies are only known at Muckle Thairn 63, Hareheugh Craigs 64, Hilton Bay 95, on the sea braes north of Burnmouth 96 and at St Abbs Head 96. At Hareheugh Craigs it grows only at the east of the site on a tiny knowe near the site of a mediaeval farmstead. At St Abbs Head there is a fine colony on Kirk Hill continuing along the knowes by Mire Loch.

Myosoton aquaticum Water Chickweed

Riverside, neophyte

Berwickshire 1987-2013	5 sites	1% tetrads	9% hectads
Britain 1987-1999		11% tetrads	27% hectads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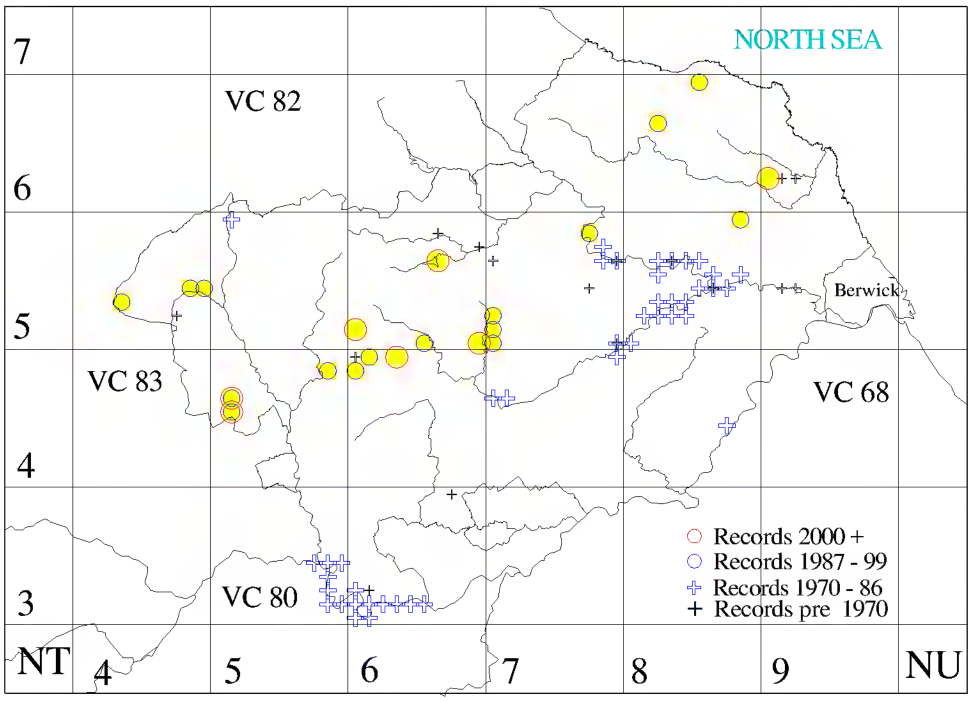
Myosoton aquaticum is quite widespread as a wetland plant in much of England but is only a scarce introduction in the north and in Scotland.

In Berwickshire it is known only by the River Tweed, most recently at Homebank 83, Lees Haugh 83 and Milne Graden 84. In all cases only a few modest patches have been found on the river bank. It is also known further up the Tweed Valley in Roxburghshire at Newstead NT53 on the River Tweed and Hawick NT51 on the River Teviot. It is uncertain whether or not it is increasing. The first Berwickshire record was in 1950 by the Union Bridge 95.

Myriophyllum alterniflorum Alternate-flowered Water-milfoil

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	35% hectads
Britain 1987-1999		11% tetrads	35% hectads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Myriophyllum alterniflorum is a plant of the north and west of Britain. It is found in both acidic and calcareous water.

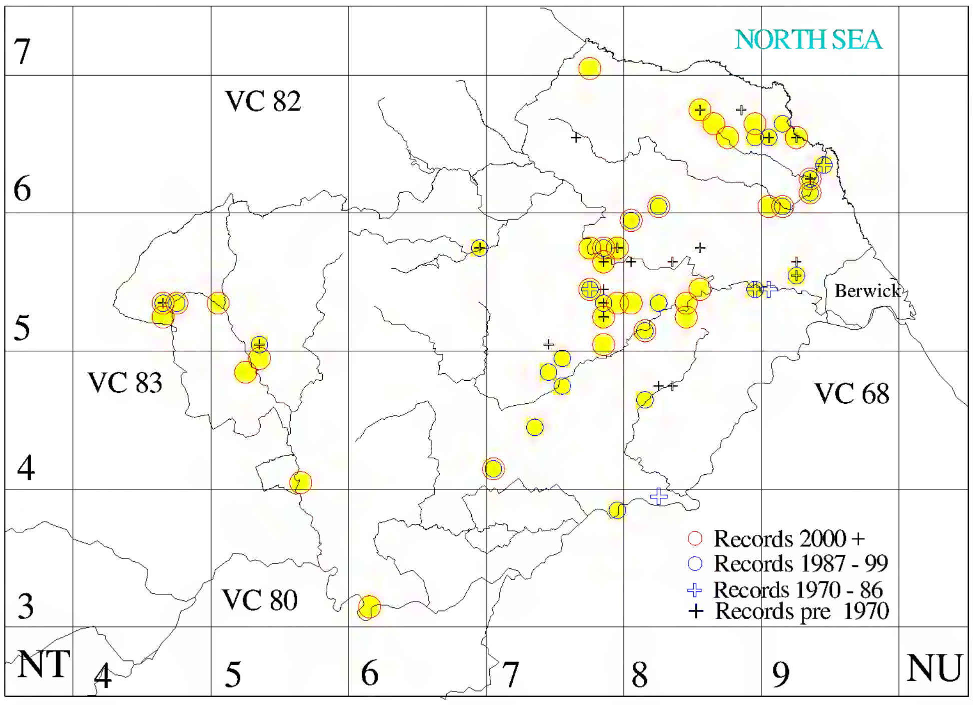
It has suffered a dramatic decline in Berwickshire. In the 1970's it was frequent in the River Tweed between Leaderfoot 53 and Dalcove 63 and in long stretches of the Blackadder and Whiteadder Waters. Recently it has only been found in a few of the hill burns and acidic ponds where it is indicative of habitat with a diverse flora.

It is probable that eutrophication is the cause of the decline.

Myrrhis odorata Sweet Cicely

Riverside, archaeophyte

Berwickshire 1987-2013	5% monads	12% tetrads	61% hectads
Britain 1987-1999		31% tetrads	14% hectads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Myrrhis odorata was formerly cultivated for its aniseed-flavoured flowers and fruits. It is now widespread in northern England and eastern Scotland.

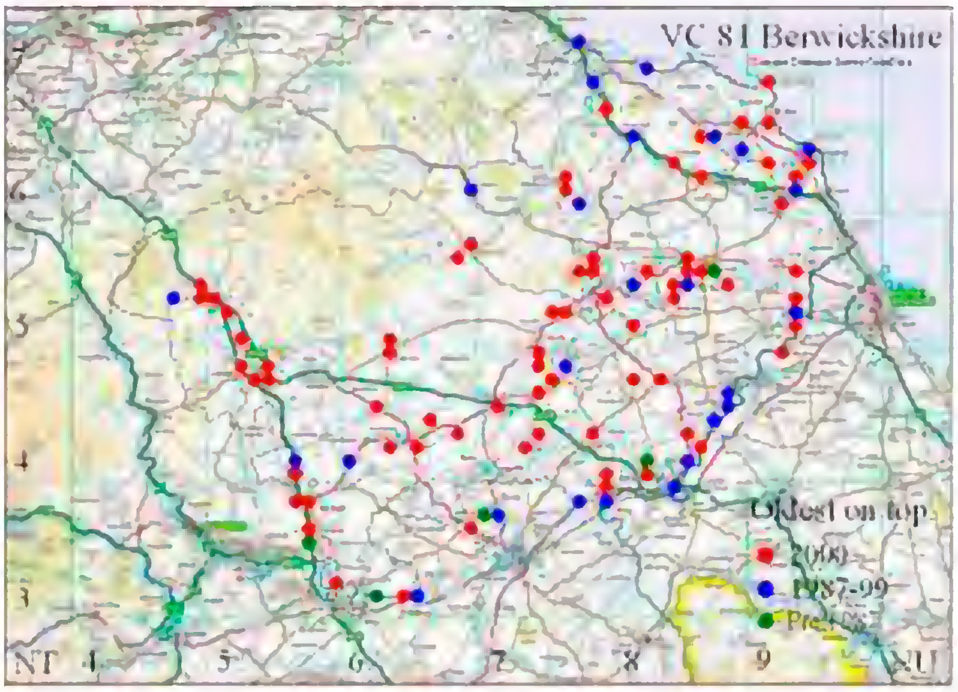
Many of the Berwickshire colonies of *Myrrhis* are increasing, which is the reverse of the situation in Yorkshire. In addition to modest clumps near farmhouses where it was cultivated, there are some extensive roadside colonies where it is suspected that the heavy fruits are distributed by tractors, especially where the tyres run onto verges to allow other vehicles to pass. However the largest colonies are by rivers where wet woodland adjacent to the river may be colonised for a kilometre or more, as by the Eye Water below Ayton 96, the Whiteadder Water near Preston 75 and the Blackadder Water near Kelloe 85.

Myrrhis odorata **by old mill on the Eye Water 2010**

Narcissus agg. [N. spp. and hybrids] Garden Daffodil

Grassland, neophyte, prominent neophyte

Berwickshire 1987-2013	9% monads	24% tetrads	91% hectads
Britain 1987-1999		42% tetrads	52% hectads



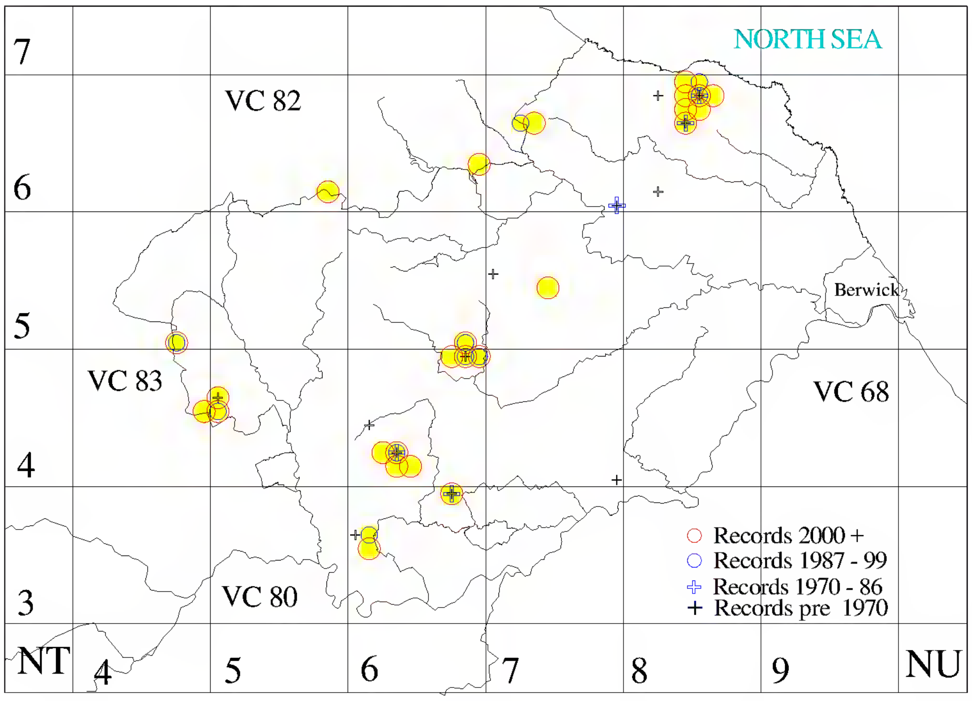
The fashion for planting out daffodils along roadsides as well as in parks and gardens becomes ever more pervasive across Britain, with every community seemingly intent on outdoing its neighbours in providing spring colour.

As elsewhere the varieties planted in Berwickshire are usually robust trumpet daffodils. The wild-type *N. pseudonarcissus* cultivars are very seldom seen. Unsurprisingly daffodils have become frequent at riversides where bulbs are washed up by floods, but where they seldom look very attractive as they do not bulk up, unlike *N. pseudonarcissus*.

Narthecium ossifragum Bog Asphodel

Moorland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	48% hectads
Britain 1987-1999		32% tetrads	49% hectads



Narthecium ossifragum is very widespread in hill country in Britain, especially in the north and west where it plentiful in all sorts of peaty ground.

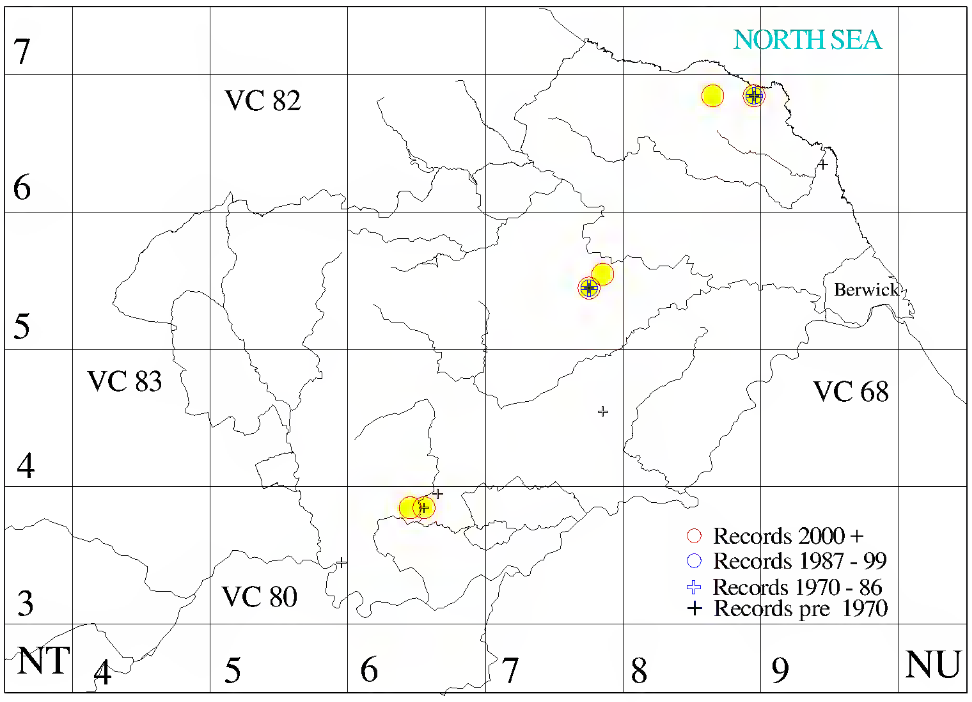
This is quite different to the situation in Berwickshire where it is only abundant on the great raised bog at Dogden Moss 64. It may once have been plentiful around Gordon Moss 64 but the habitat is now so degraded that only tiny colonies remain there. There are a good number of colonies in the Coldingham Common area 86 with its more oceanic climate, some on the raised bogs at Drone Moss 86 and Long Moss 86, but also in open flushes. *N. ossifragum* is also quite prominent at Longmuir Moss 45 and over quite a wide area of undistinguished moorland on Lauder Common 44, 45. There are only tiny colonies in the Lammermuirs. Presumably it was once more widespread there before centuries of muirburn degraded the shallow peats.

There are a few historical losses but little recent change.

Nuphar lutea Yellow Water-lily

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1+3 sites	2% tetrads	13% hectads
Britain 1987-1999		8% tetrads	33% hectads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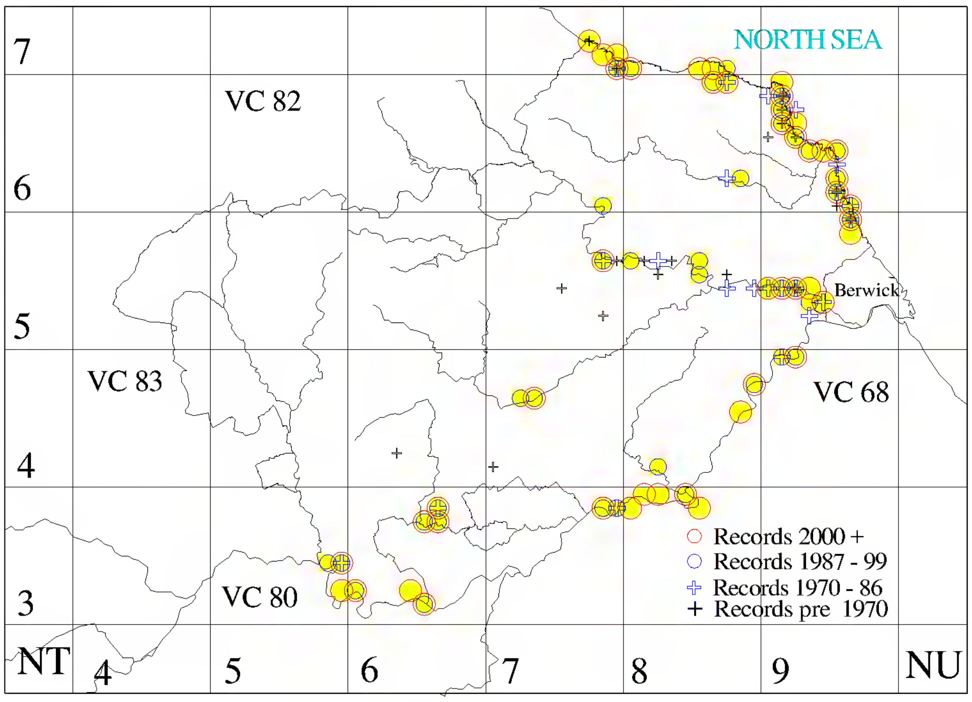
Nuphar lutea is an aquatic of less-acid still waters that is widespread in southern England and on the west side of northern England and Scotland.

The only native Berwickshire colony is at Coldingham Loch 86, where it is plentiful, but it has been successfully introduced to the lake at Mellerstain 63, to the Hen Poo at Duns Castle 75 and at Loch Richie 86 following its rather successful recent construction.

Ononis repens Common Restharrow

Grassland, native, other axiophyte

Berwickshire 1987-2013	5% monads	12% tetrads	65% hectads
Britain 1987-1999		18% tetrads	46% hectads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Ononis repens is widespread in Britain in base-rich rocky grassland and sandy places.

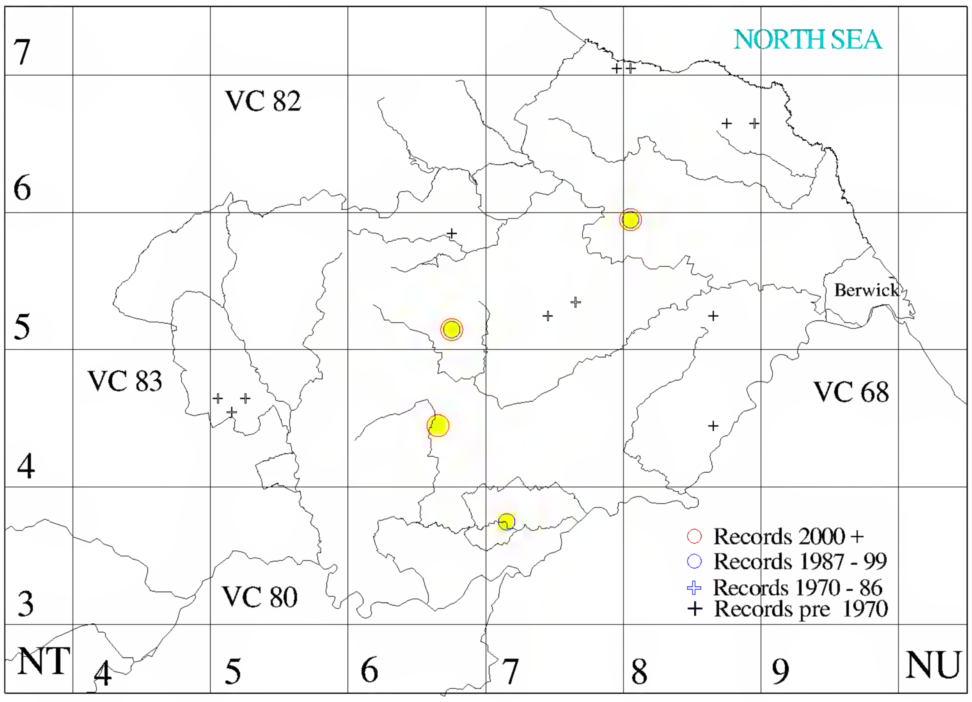
In Berwickshire it is most frequent along the coastal strip, favouring somewhat unstable grassy slopes where it may be quite plentiful. Inland it is relatively frequent near the River Tweed where it is remarkably persistent, but usually present in small quantity only. It is often one of the last survivors of formerly more diverse grassland on account of its preference for steep slopes protected from reseeding and fertilisers. It has not persisted so well by the Whiteaddder Water as many of the slopes where it grew are now ungrazed and have been colonised by coarse grasses and scrub. It is found in some of the grasslands on the igneous rocks of the Kelso Traps.

There is no evidence of recent colonisation. Some decline is indicated, as noted above.

Ophioglossum vulgatum Adder's-tongue Fern

Grassland, native, rare or scarce

Berwickshire 1987-2013	4 sites	1% tetrads	17% hectads
Britain 1987-1999		9% tetrads	36% hectads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Ophioglossum vulgatum is a very inconspicuous short fern of damp grassland, open woodland and dune slacks that is widespread in England but local and coastal in Scotland.

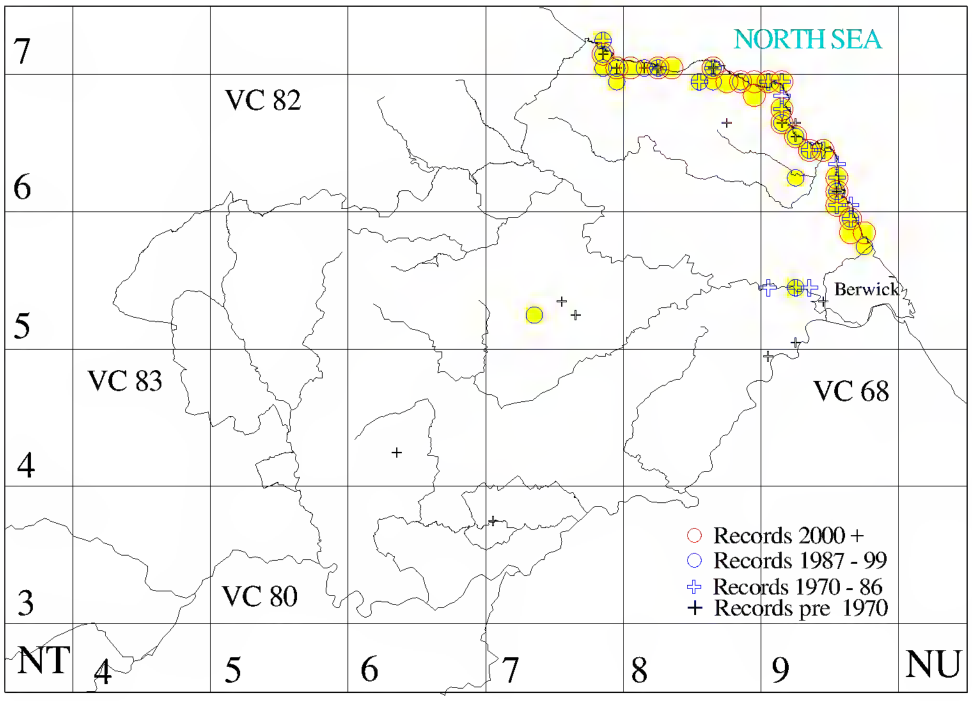
Only four extant populations are known in Berwickshire. It just survives in Gordon Community Woodland 64 but is likely to succumb to the shade of the recent plantings, there is an excellent colony in a wet field by the Milldown Burn 65 just north of the B6456, two patches grow on a moist bank in the park at Newton Don 73 and a most unlikely colony occurs on a seemingly dry knowe in a reseeded field near Bunkle Castle 85.

It was formerly more widespread, but the ploughing and re-seeding of grassland has taken its toll. However it is very inconspicuous and may be overlooked. I found it on my lawn at Denholm, Roxburghshire NT51 which was an old grass tennis court and, when we moved, we found it on the lawn and in a tiny paddock of our home at Clarilaw, Roxburghshire NT51. It is also on my brother’s lawn in Northumberland NY97. These lawns all date from Victorian times.

Orchis mascula Early-purple Orchid

Coast, native, selected axiophyte

Berwickshire 1987-2013	3% monads	5% tetrads	30% hectads
Britain 1987-1999		15% tetrads	50% hectads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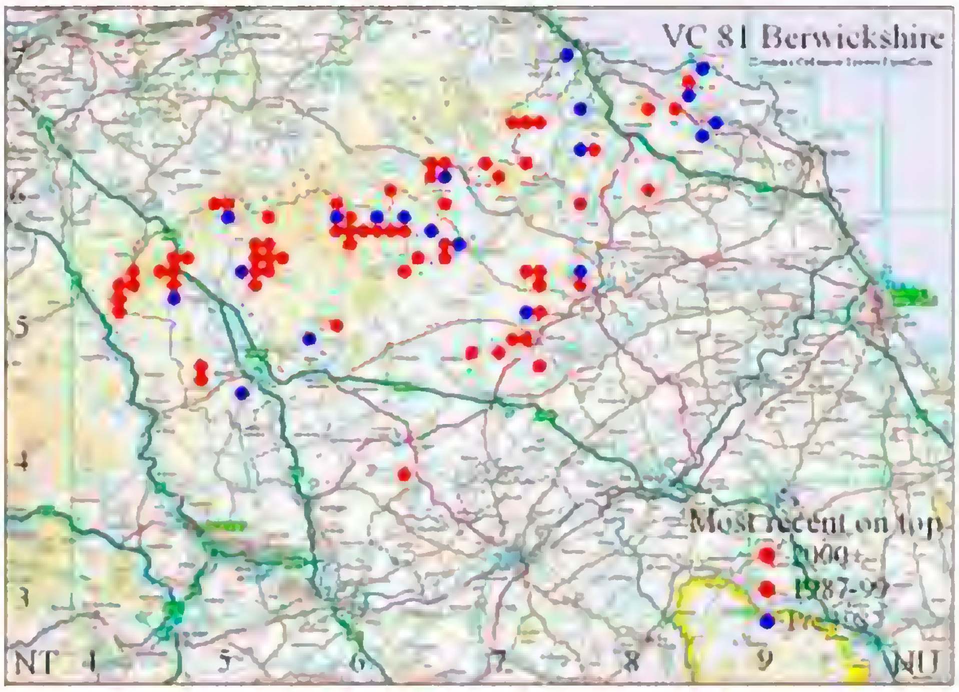
Orchis mascula is more widespread in southern Britain than the north. However, even in Scotland it has been quite a generally distributed species in the recent past so its retreat to the Berwickshire coast is thought-provoking. Inland it used to grow in small quantity along the steep banks of the lower Whiteadder Water at the woodland-edge, but it has not been refound there recently or at the last more typical woodland site at Langtonlees 75. Its few meadow occurrences were lost many years ago, underlying the near absence of any English-type wildflower meadows in Berwickshire.

This orchid is much scarcer even on the coast than the distribution map suggests. Most of the colonies are on unstable near-vertical slopes, often accompanied by *Primula veris* Cowslip. Colonies on more level ground have either been lost to development, such as the new harbour and golf course at Eyemouth 96, or have suffered from a lack of seasonal grazing or hay cutting, as at Coldingham Bay 96. There is a fear that *O. mascula* may decline further in the near future.

Oreopteris limbosperma Lemon-scented Fern

Moorland, native, other axiophyte

Berwickshire 1987-2013	5% monads	13% tetrads	48% hectads
Britain 1987-1999		31% tetrads	44% hectads



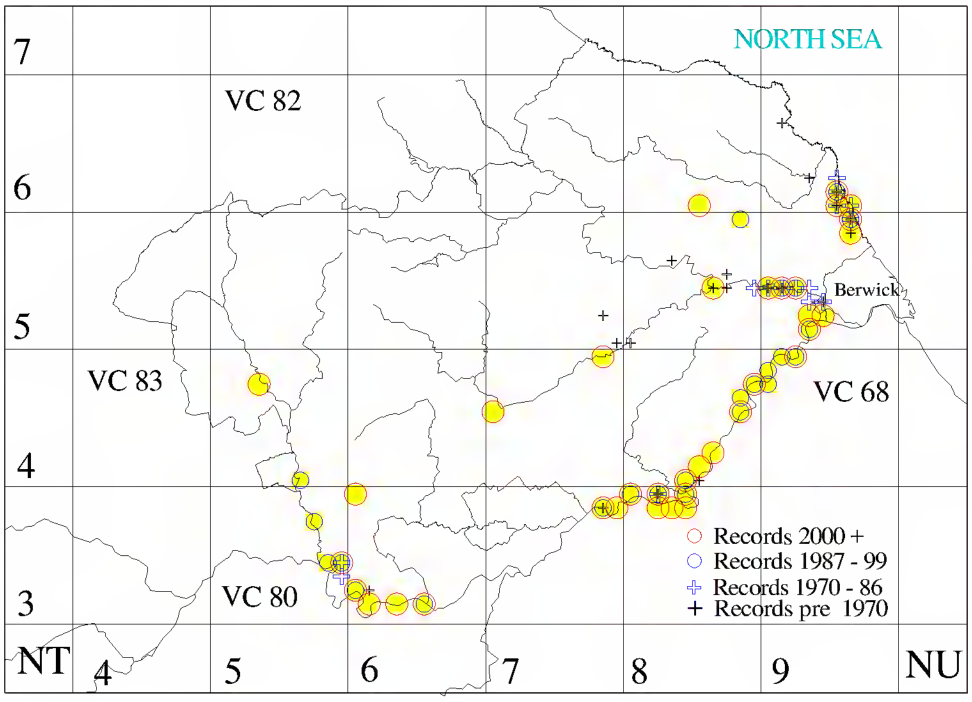
Oreopteris limbosperma is very widespread in hill country in Britain and is found right across the Lammermuirs in Berwickshire. It favours hill cleughs and north or east-facing banks along the burns where it is often quite plentiful and accompanied by other ferns. A small colony survives away from the hills near Marchmont 74 on a north-facing burnside bank in mixed woodland.

The populations all appear to be long-established and almost all seemingly suitable habitat is colonised. There are a few historic losses from areas where moorland has been destroyed.

Origanum vulgare Wild Marjoram

Grassland, native, other axiophyte

Berwickshire 1987-2013	4% monads	9% tetrads	52% hectads
Britain 1987-1999		11% tetrads	32% hectads



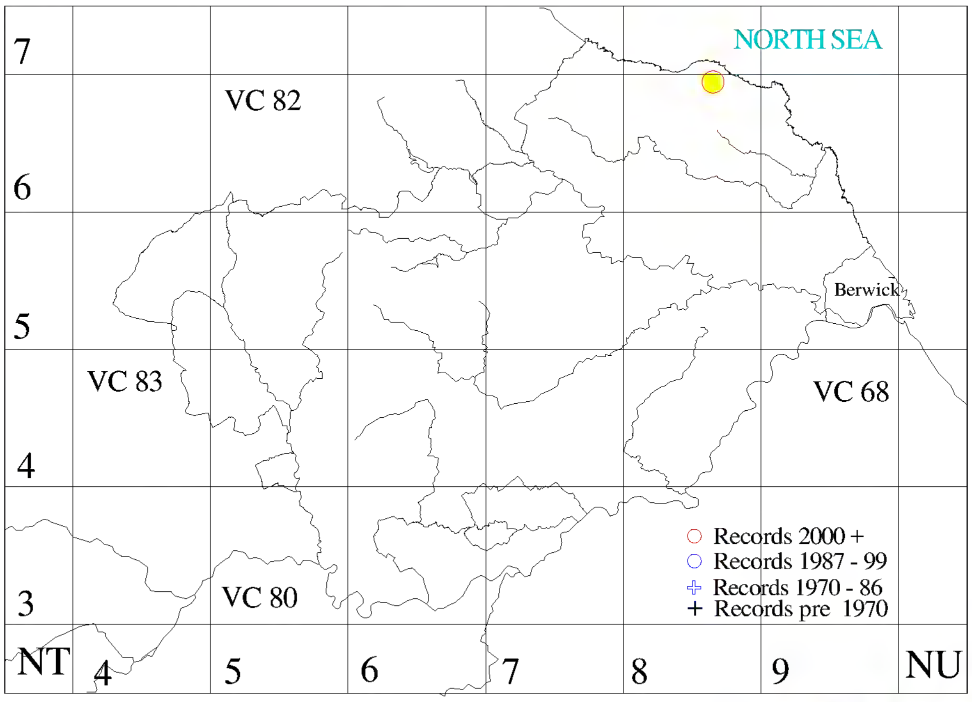
The British distribution of *Origanum vulgare* shows it to be very much a plant of the limestone and its Scottish distribution is accordingly restricted. On the Berwickshire coast it is more or less limited to the limestone towards the English border and is not found to the northwest where it might have been expected as an associate of *Carlina vulgaris* Carline Thistle. Inland it favours the unstable habitats of steep riverside slopes which are colonised by *Ononis repens* Restharrow but also extends to less base-rich ground. Most of the disjunct populations away from the rivers are introductions and some of the riverside colonies could be naturalised introductions.

There is no evidence of recent decline. Some limited cycle of loss and new colonisation may occur along the River Tweed, but most colonies seem to be long-established.

Orobanche alba Thyme Broomrape

Coast, native

Berwickshire 2014	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	2% hectads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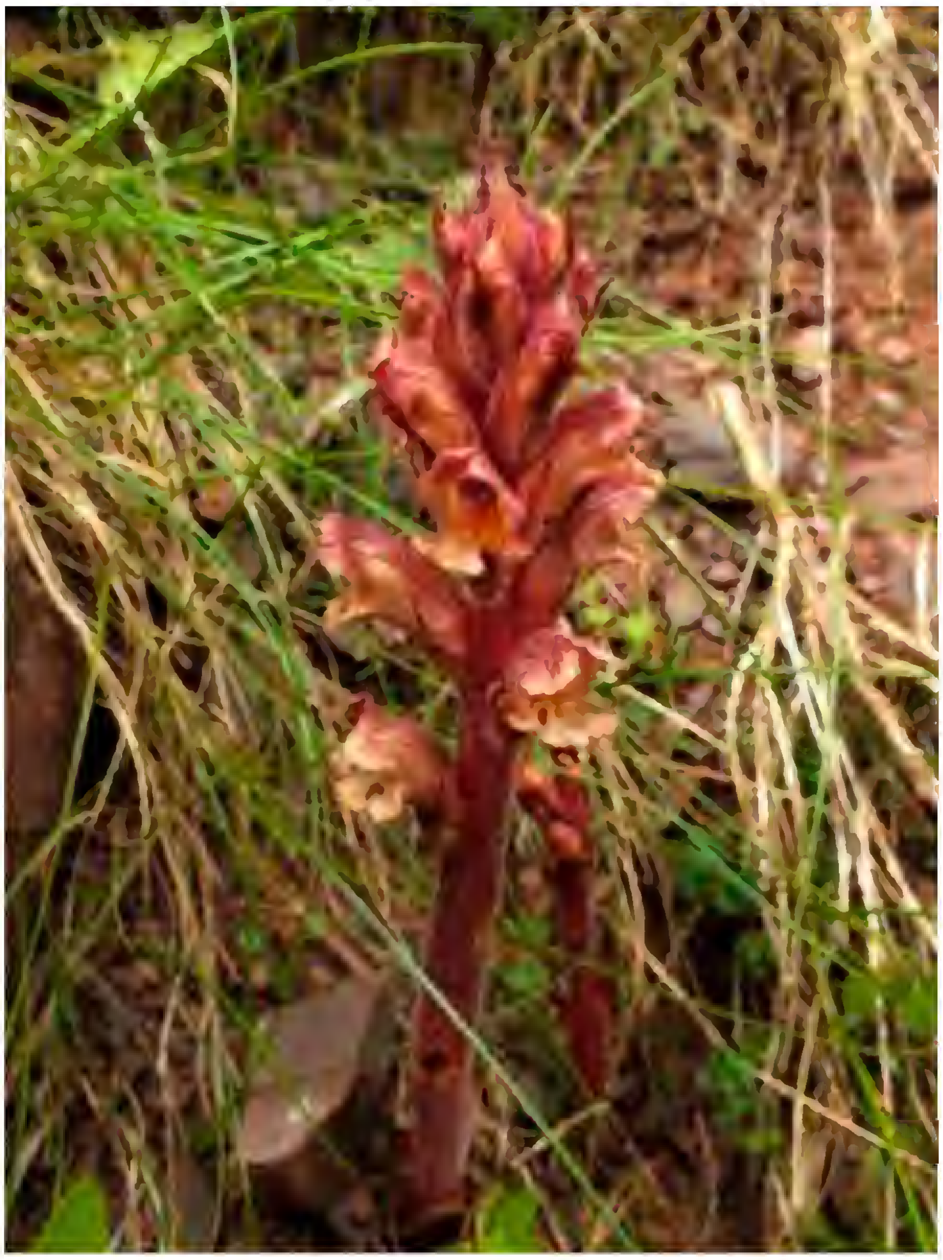
Orobanche alba is a root parasite on *Thymus polytrichus* Wild Thyme. Much of its modest British distribution is on coastal cliffs and screes in the west of Scotland, where populations of this mainly annual plant vary in size from year to year. Indeed it may fail to appear for some years at a particular site.

Robin Cowe's discovery of a group of thirty-five spikes in 2014 on *Thymus* on a south-facing scree-slope in Lumsdaine Dean 86 was a considerable surprise, as the only other east coast colony is in Fife, 60km or so to the north. Species associated witht the *Orobanche* include *Helianthemum nummularium* Common Rock-rose. It seems more likely that this is a native site, where the appearance of the *Orobanche* is sporadic, than that it represents recent colonisation. The flowering occured after an exceptionally mild winter.

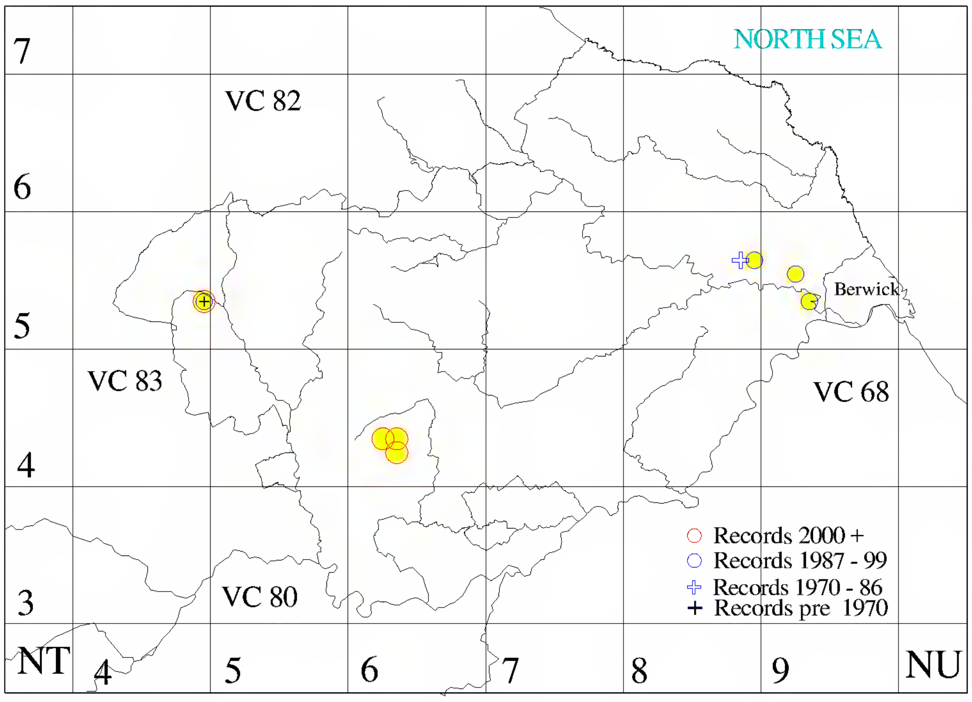


Orobanche alba
Robin Cowe

Papaver dubium subsp. lecoqii (P. lecoqii) Yellow-juiced Poppy

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	3¾ sites	2% tetrads	17% hectads
Britain 1987-1999		2% tetrads	14% hectads



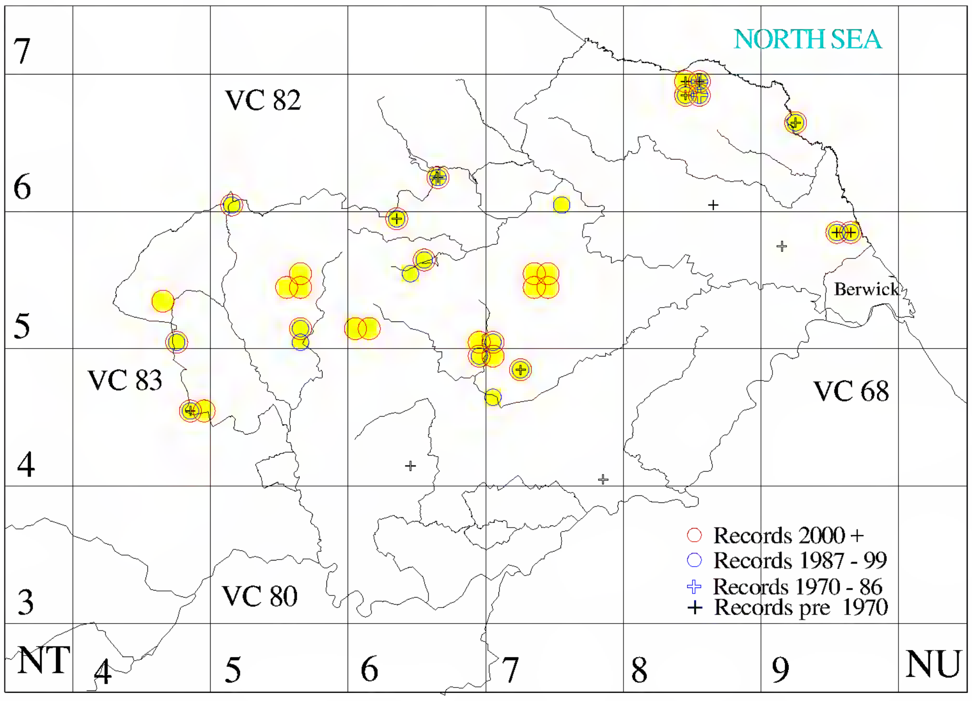
Papaver dubium subsp. lecoqii is quite frequent on calcareous soils in a limited area of southern England where it is a weed of arable and disturbed ground. It is scarce elsewhere and there are few Scottish records.

As historical records might only be lacking due to confusion with *subsp. dubium* Long-headed Poppy there is no direct evidence to support the suspicion that this taxon has colonised Berwickshire relatively recently, perhaps with the coming of the railway. Recent records have been at Oxton 45 near the former railway station, where it has been known since 1960, and in arable fields near Gordon 64. It was found in 1999 in ruderal situations around Paxton 95 and Foulden 95 but has not been seen more recently thereabouts.

Parnassia palustris Grass-of-Parnassus

Wetland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	7% tetrads	57% hectads
Britain 1987-1999		10% tetrads	24% hectads



Parnassia palustris is a familiar and well-loved plant in southwest Scotland and more locally throughout the rest of Scotland and northern England. It is a species of base-rich flushes and dune-slacks. The requirement for base-richness appears to increase away from the west coast.

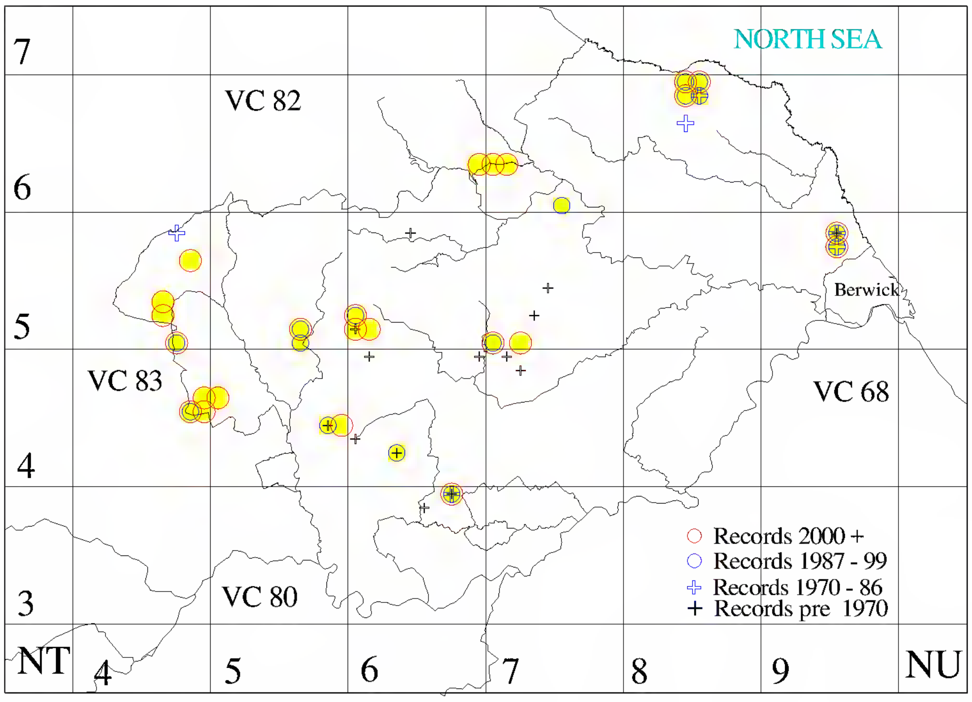
In Berwickshire it is localised in the best base-rich flushes and shallow calcareous fens, with fine colonies at Longmuir Moss 45, around the Fangrist Burn 64, around Hells Cleugh below Langton Edge 75, around the head of Lumsdaine Dean 86 and at Lamberton Moor Moss 95. A short-stemmed colony of the normal form grows on the coast at Yellow Craig 96, south of Coldingham Sands, while dwarf plants on the coast below Lamberton Shiels 95 correspond to *var. condensata*.

At least one colony appears to have been lost recently, that above Hen Toe Bridge 76 where the vegetation is ungrazed and has become rank. Losses in tall vegetation are difficult to prove, as this is a late-flowering plant that is very hard to spot in this habitat if not in flower.

Pedicularis palustris Marsh Lousewort

Wetland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	52% hectads
Britain 1987-1999		19% tetrads	40% hectads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Pedicularis palustris is widespread but rather local throughout Scotland, northern England and Wales. It is a plant of watery flushes where the vegetation cover is incomplete and that are fairly base-rich. Its habitat is similar to that of *Parnassia palustris* Grass-of-Parnassus but it is more dependent on open habitat as it is an annual or biennial species requiring vegetation gaps to seed into.

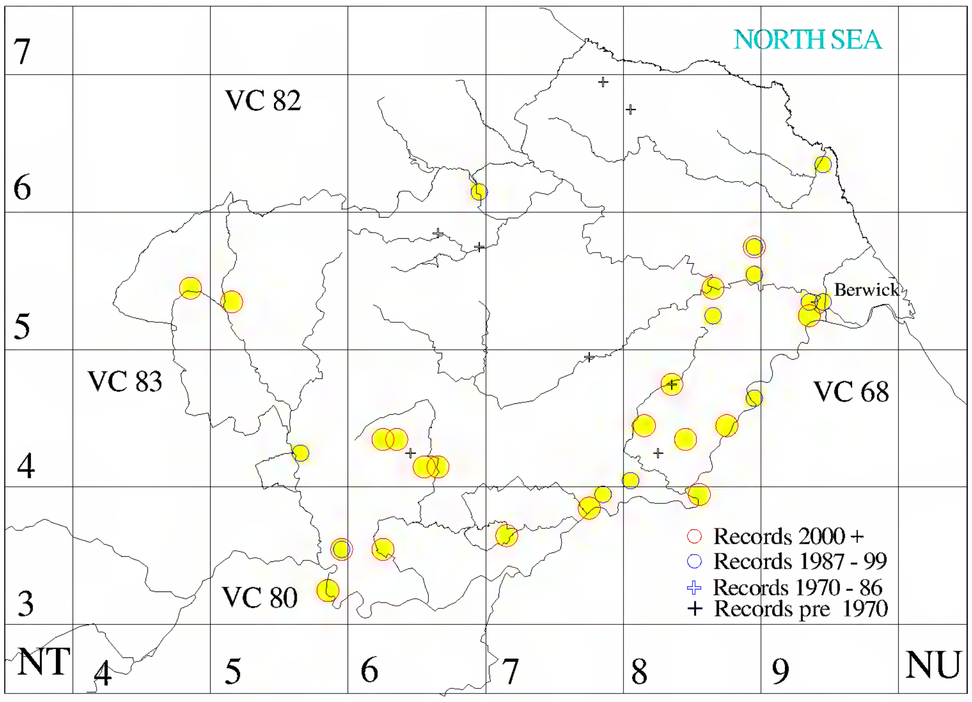
The best Berwickshire colonies are on Lauder Common 44, at Longmuir Moss 45, around the Boondreigh Burn 65, along the Philip Burn 76 and on Blackford Rig 76, around the head of Lumsdaine Dean 86 and at Lamberton Moor Moss 95.

Colony size may fluctuate depending on the degree of disturbance; a little cattle grazing may be beneficial in keeping the habitat open. The population near Gordon Moss 64 is believed to have become extinct recently.

Persicaria lapathifolia Pale Persicaria

Arable, native, selected axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	57% hectads
Britain 1987-1999		36% tetrads	55% hectads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For a time I thought *Persicaria lapathifolia* was absent from Berwickshire and that old records related to white-flowered forms of *P. maculosa* Redshank. This would have been at variance with the British distribution which is of a predominantly southern species extending well into Scotland. More recently it has been found in small quantity in scattered localities across the county.

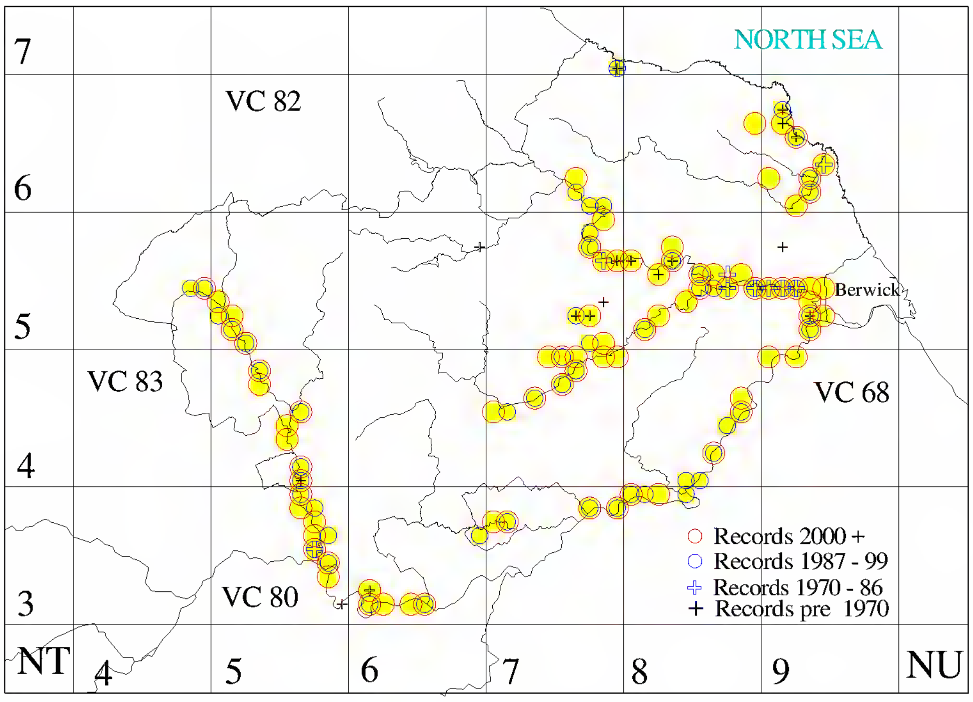
About half the Berwickshire records are from damp corners of arable fields and the rest from riversides. Its scarcity as an arable weed emphasises the plight of species that require imperfect drainage and is thus no surprise in a county with well-managed farms. While many arable weeds may be found by rivers, they typically grow on sand and gravel. In contrast, *P. lapathifolia* is usually found on damp mud at the foot of *Phalaris arundinacea* Reed Canary-grass.

The historical record is not sufficient to give evidence of trends.

Petasites hybridus Butterbur

Riverside, archaeophyte

Berwickshire 1987-2013	9% monads	21% tetrads	74% hectads
Britain 1987-1999		2% tetrads	6% hectads



Petasites hybridus is such a widespread and familiar plant that there has been a hesitancy to query its origin in county Floras, despite the widely cited phenomenon that the male and female plants of this largely dioecious species have contrasting distributions.

This *Petasites* was very much a ‘must have’ plant for country folk in the past. It had three distinct uses. First it was much valued as a source of early-season nectar for bees. Only the male plants have any value for this purpose. Secondly, the huge leaves were used as wrapping paper, notably for butter but no doubt for many other purposes. Thirdly it was much used as a medicinal herb. The large rhizomes were dried and extracts were used to treat fevers and other complaints.

With all these uses it is no wonder that this *Petasites* was widely planted in a suitable spot by the burn near farmsteads and settlements. In Berwickshire I have frequently observed the furthest upstream colony to lie in just such a spot. A neat example is at Marchmont 74 where a burn runs down through the setting for the mansion house. Unsurprisingly, just below the mansion house the native species are joined by *Aegopodium podagraria* Ground-elder, but it is a further kilometre downstream before the *Petasites* occurs. Significantly this colony of the male plant is immediately below Polwarth Kirk, built in 1703 on the site of an earlier church and settlement.

A study of the habitats of this *Petasites* is revealing. In general the habitat is the floodplain. I have only once noted a colony in Berwickshire away from the floodplain. That is by the Boondreigh Water 54. There a small colony grows in a flush at the top of a short but steep bank. The colony is only 50m from the burn and might be an example of windblown seed dispersal, but I would suggest that rhizome fragments could have been unwittingly transported that short distance by cattle. Alternatively the colony might once have been continuous from the burnside with the lower part lost to bank erosion as the burn meandered over the centuries and undercut the bank. Even more tellingly, the *Petasites* is all but absent from burns and flushes along Berwickshire’s cliff-lined coastline where suitable habitat is much colonised by *Eupatorium cannabinum* Hemp-agrimony, being confined to the banks of rivers and burns with human settlement. This distribution closely matches that of *Aegopodium podagraria* Ground-elder, generally agreed to be an archaeophyte, and a much more recent coloniser, *Allium paradoxum* Few-flowered Garlic.

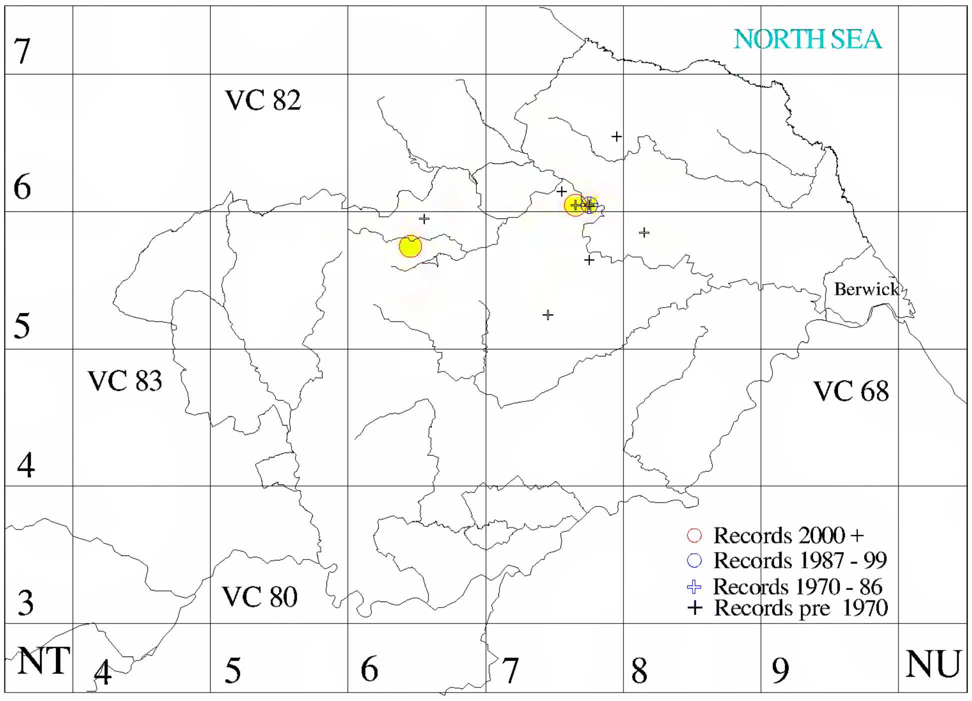
This discussion suggests that for many northern areas, including, I would argue, the Scottish Borders, there is a strong case for treating *Petasites hybridus* as an archaeophyte that has dispersed freely down the river system from the points of introduction.

The female plant was unknown in Berwickshire until 2013 when a small colony was found by Robin Cowe by the River Tweed just below the Union Bridge 95. This is probably recent colonisation from one of the few colonies known further up the Tweed valley in Roxburghshire.

Phegopteris connectilis Beech Fern

Woodland, native, rare or scarce

Berwickshire 1987-2013	3 sites	0.6% tetrads	9% hectads
Britain 1987-1999		16% tetrads	27% hectads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Phegopteris connectilis is widespread in northern and western Britain but scarce or absent in the east. It is most typical of sessile oak woods but also occurs in screes and cleughs.

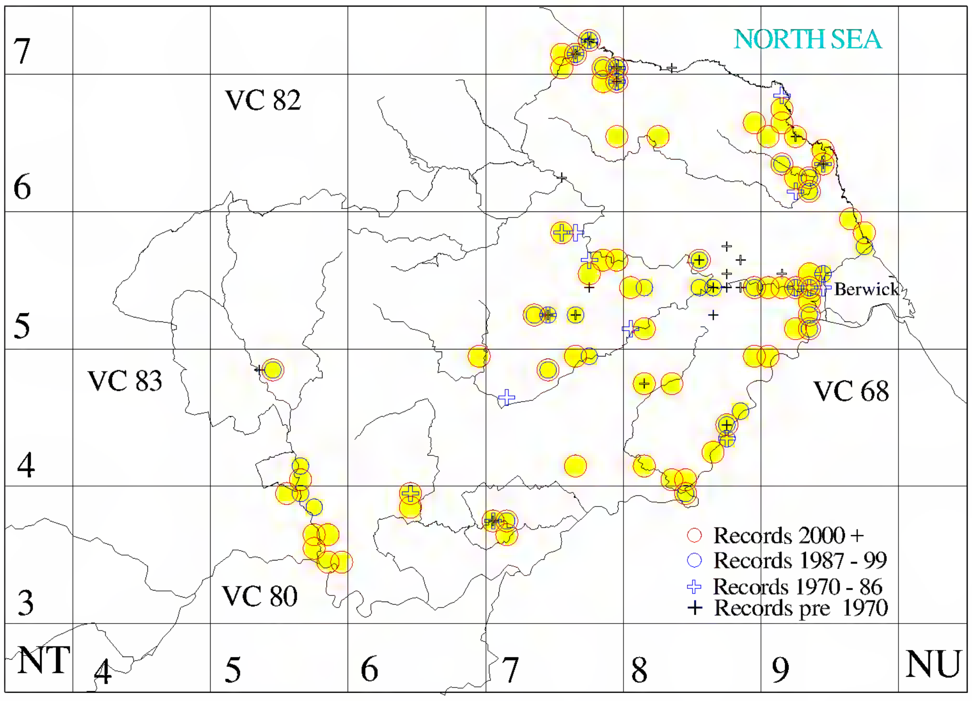
Berwickshire lies very much at the limit of its range and it is poorly represented. There is a fine colony on a wet bank by the burn in Ellerburn Wood 76 where it grows with *Gymnocarpion dryopteris* Oak Fern, but the wood is given over to conifers. A small colony occurs unexpectedly on a north-facing wet bank by the Dye Water near Trottingshaws 65.

There have been some historical losses.

Phyllitis scolopendrium (Asplenium scolopendrium) Hart's-tongue Fern

Woodland, native, other axiophyte

Berwickshire 1987-2013	7% monads	17% tetrads	70% hectads
Britain 1987-1999		41% tetrads	67% hectads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Phyllitis scolopendrium is a fern that is very widespread in England and Wales but more local in Scotland. It grows on banks and rocks in moist woodland on base-rich substrates and also on mortared walls. It was once regarded as something of a rarity in Berwickshire, being confined to the deepest chasms in the finest deans and to a few gardens where it had been introduced. This is no longer so. It is now frequent in woodlands where there are wet cliffs or damp banks. This habitat is usually where ancient woodland remains, at least as fragments, so the distribution map matches that of ancient woodland quite well, despite the recent colonisation. It is probably increasing on walls as well, but the historical record is inadequate to substantiate that. In its long-established sites it has often spread out of the rock habitat in the gorge onto wet banks on the upper slopes.

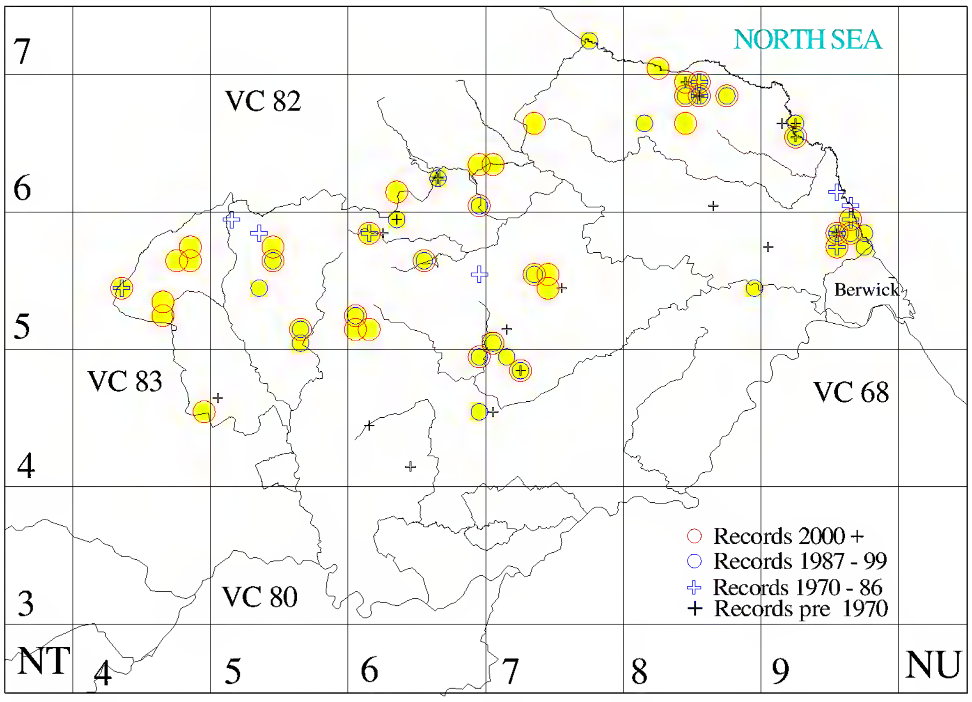
The recent colonisation probably reflects climate change. Although mature plants are very frost-hardy, sporelings may not be. However, garden introductions may conceivably have introduced a more hardy variety, which then naturalised widely.

***Phyllitis scolopendrium* in open woodland**

Pinguicula vulgaris Common Butterwort

Wetland, native, selected axiophyte

Berwickshire 1987-2013	4% monads	11% tetrads	65% hectads
Britain 1987-1999		20% tetrads	42% hectads



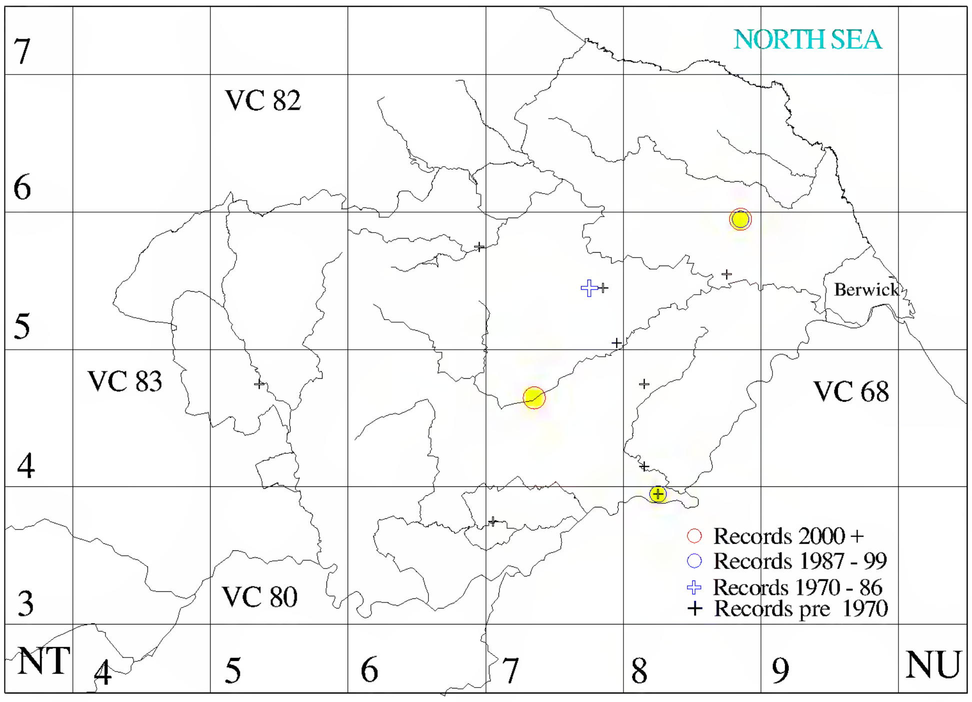
Pinguicula vulgaris is very widespread in Scotland, northern England and Wales but is most frequent in the west. It is a plant of flushes which may be quite acidic in the west but in Berwickshire it is confined to base-rich habitats with short vegetation, though it is slightly more widespread than some of the other base-rich flush species in the Lammermuirs. Good colonies are found in the series of flushes near the head of Lumsdaine Dean 86 and on Lamberton Moor 95, with outliers on the coast below. It has an alternative habitat on dripping cliffs and steep eroding slopes as at the foot of Howbog Burn by the upper Whiteadder Water 66, on Hutton Castle Scaur on the lower Whiteadder 85 and at Ramsheugh Bay on the coast 77, though the latter two sites may have been lost recently to eutrophication.

The distribution map points to a steady decline over the years with outlying lowland populations being lost to eutrophication and some upland populations being lost as flushes are invaded by coarser species, particularly the rushes *Juncus articulatus* and *J. effusus*, probably also in response to eutrophication.

Plantago media Hoary Plantain

Grassland, native, rare or scarce

Berwickshire 1987-2013	1¼+1 sites	0.9% tetrads	13% hectads
Britain 1987-1999		15% tetrads	28% hectads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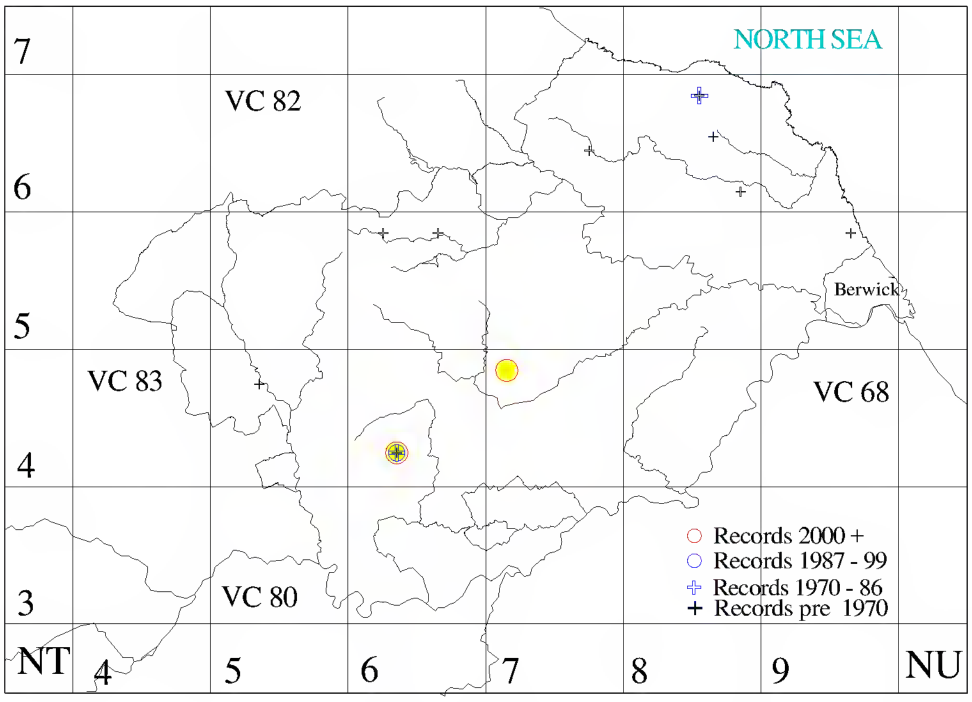
Plantago media is a herb of calcareous grassland that is very widespread in England but scarce in Scotland, where it is often an introduction.

This species was formerly known in a number of places in Berwickshire both in natural grassland and on old lawns, where it may have introduced with grass seed or have been a relict of former meadows. All the lawn colonies have gone but a tiny colony was discovered in 2005 on a bank by the Blackadder Water near Lintmill Bridge 74. It has been successfully introduced at Causewaybank Sandpit 85.

Platanthera bifolia Lesser Butterfly-orchid

Woodland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.6% tetrads	9% hectads
Britain 1987-1999		3% tetrads	12% hectads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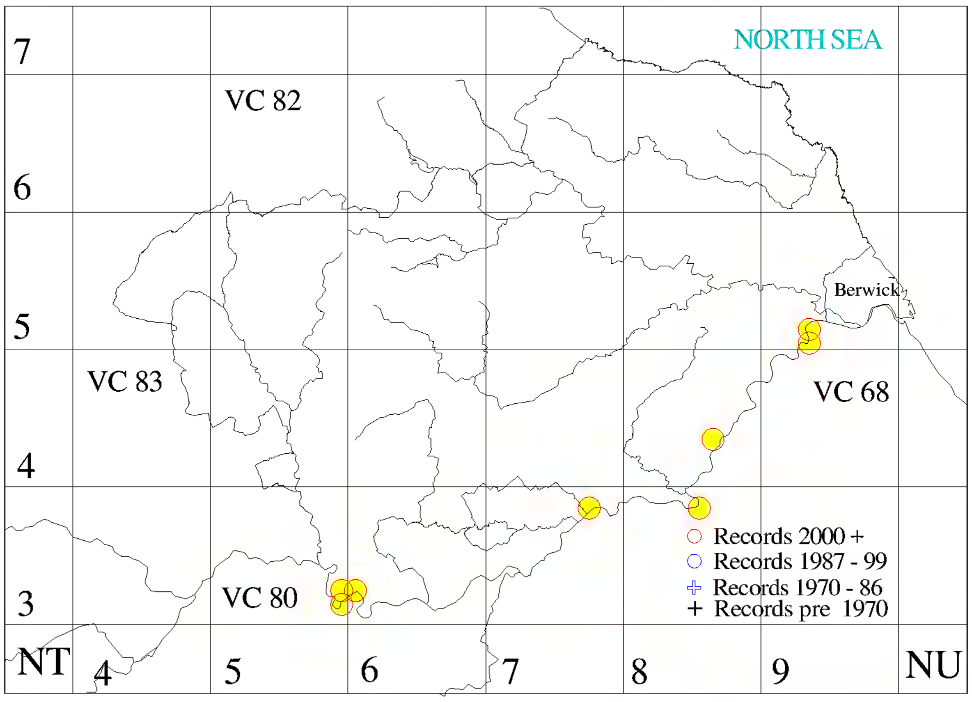
Platanthera bifolia is a woodland-edge orchid found on a variety of soil types. It is local in Britain and most frequent in the north-west.

Gordon Moss 64 has been famed for this orchid for two centuries, but its history there is a sad one. In the 1960's the council started dumping refuse at the moss. There was an outcry which led to the dumping being stopped and to the moss being notified as an SSSI and made an SWT wildlife reserve. Rides were cut in the birch woodland in the moss and these were colonised splendidly by the orchid. Hundreds of spikes were recorded in thirteen 100x100m grid cells between 1987 and 1993. More recently the rides have become overgrown and the moss as a whole has partly dried out. The best recent count was of 34 spikes in four 10x10m grid cells in 2007. In some years the orchid is reduced to a few spikes. Clearings have now been cut to try to foster a revival and the outcome is awaited. Away from Gordon Moss the only recent records have been the most unexpected flowering in the year 2000 only of two spikes on Greenlaw Moor 74 in unsuitable habitat and records from Long Moss 86 up to 1980. The habitat at Long Moss, like that at Gordon Moss, is abandoned peat cuttings being colonised by birch.

Poa palustris Swamp Meadow-grass

Riverside, neophyte

Berwickshire 1987-2013	1% monads	2% tetrads	26% hectads
Britain 1987-1999		0.1% tetrads	1% hectads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Poa palustris is a scarce neophyte that is most often found in Britain in ruderal habitats, including docks and railways. However its well-established populations may be at riversides.

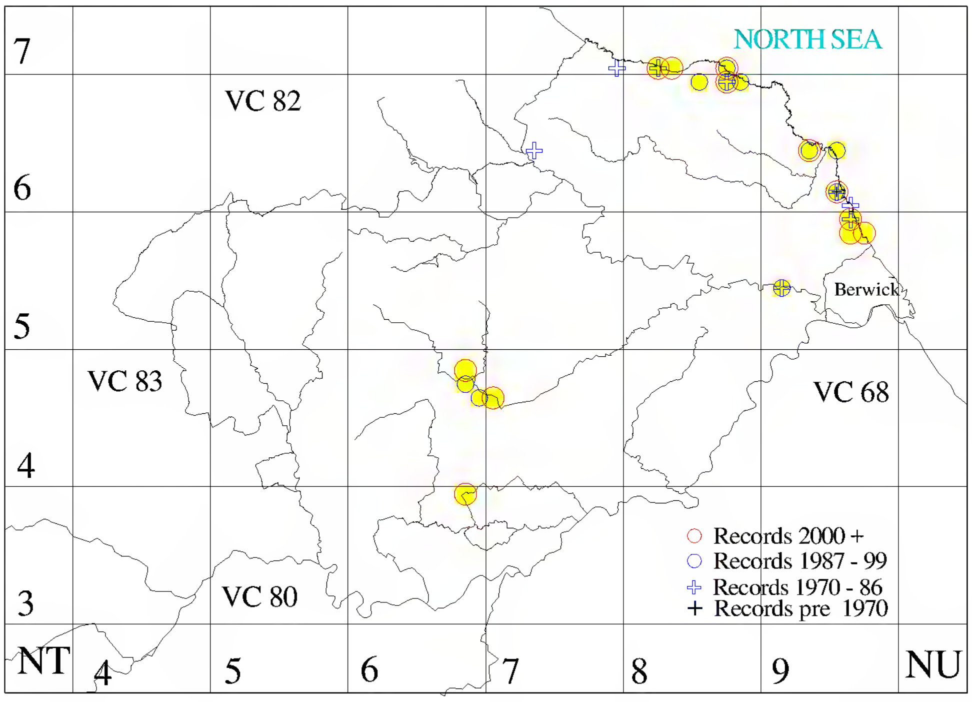
It was not detected in Berwickshire until 2007, but there is every reason to think that it was long overlooked. It grows in wet alluvium in small habitat gaps near the water, as among willows or at the water's edge at the base of colonies of *Phalaris arundinacea* Reed Canary-grass. It seems astonishing that such a delicate grass can survive in this transient habitat, as it grows in small colonies, until one calcuulates that a colony of only 20 plants is capaable of producing 50,000 seeds in a season. The localities are below Dryburgh 53, below Clinthill 63, above Springhill 73, at Lees Haugh 83 and above and below the Union Bridge 95.

Poa palustris **Lees Haugh 2007**

Polygala vulgaris Common Milkwort

Grassland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		20% tetrads	53% hectads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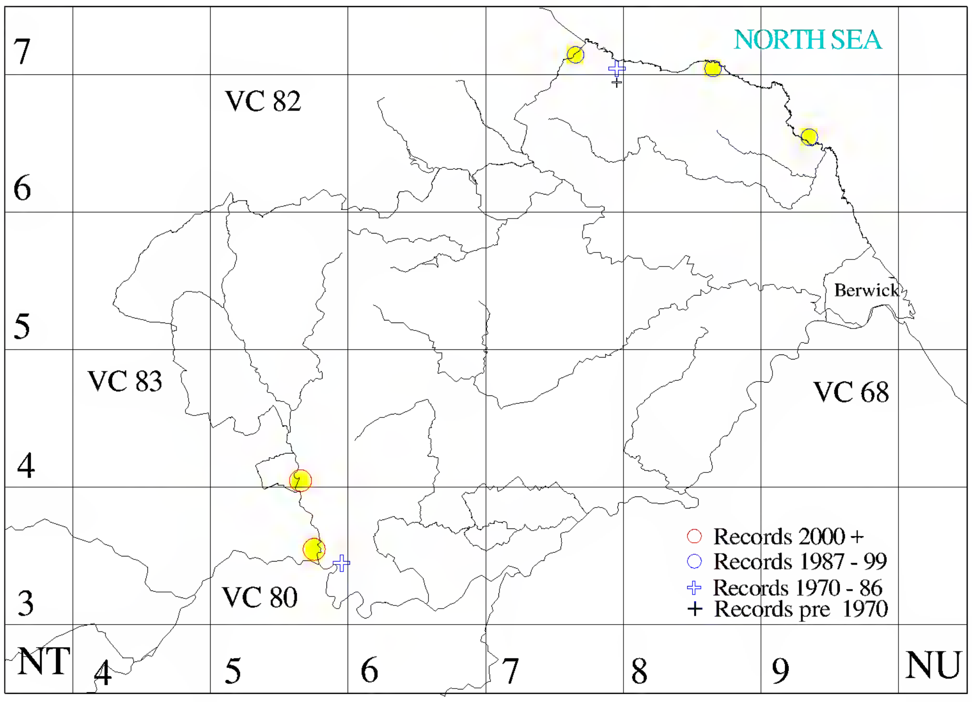
Polygala vulgaris is widespread in Britain, with a preference for the chalk and limestone but is also found on other base-rich rocks and sands. In Berwickshire it is a component of the many of the most species-rich grasslands of the coastal strip, but is not found on the igneous rocks of St Abbs Head 96 where *P. serpyllifolia* Heath Milkwort is present. Inland it may have been lost from its two recorded sites by the Whiteadder Water but occurs on the Old Red Sandstone in Greenlaw Dean 64 and further upstream on the banks of the Blackadder. There is only one isolated record from the igneous rocks of the Kelso Traps 63.

Historically it was confused with *P. serpyllifolia*, so there are no acceptable nineteenth century records. Modest recent decline is suggested from the data held. There is no suggestion of recent colonisation.

Polypodium interjectum Intermediate Polypody

Woodland, native, rare or scarce

Berwickshire 1987-2013	6¾ sites	2% tetrads	22% hectads
Britain 1987-1999		12% tetrads	35% hectads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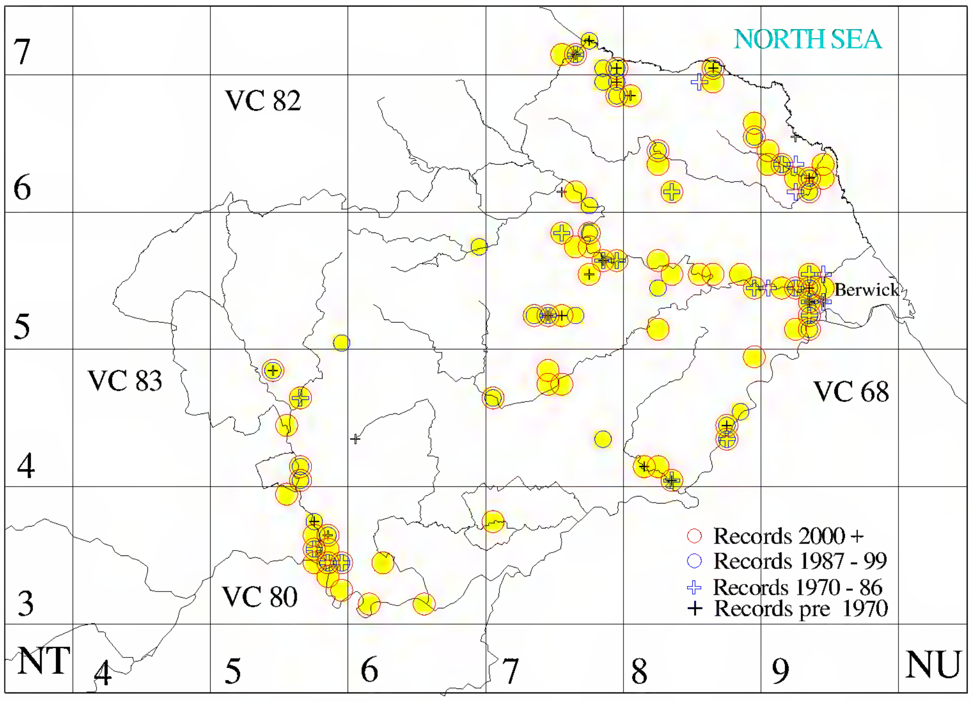
Polypodium interjectum is a rather local fern, mainly found in south and west Britain on rock and as an epiphyte on trees.

It is scarce in Berwickshire, but difficulties in identification mean that the absence of a recent record for a site gives no indication of possible losses. All the localities are in humid microclimates by water. Some are on dripping rocks. The colonies by the Leader Water at Birkwood Heugh, Carolside 54 and a crag by the river near Redpath 53 have only been discovered recently. Less recent records are from Gaitheugh 53, Dunglass Dean 77, Pease Dean 77, Dowlaw Dean 87 and Fleurs Dean 96. The hybrid with *P. vulgare* has been found near some of the sites in deans on the coast.

Polystichum aculeatum Hard Shield-fern

Woodland, native, other axiophyte

Berwickshire 1987-2013	7% monads	18% tetrads	70% hectads
Britain 1987-1999		16% tetrads	43% hectads



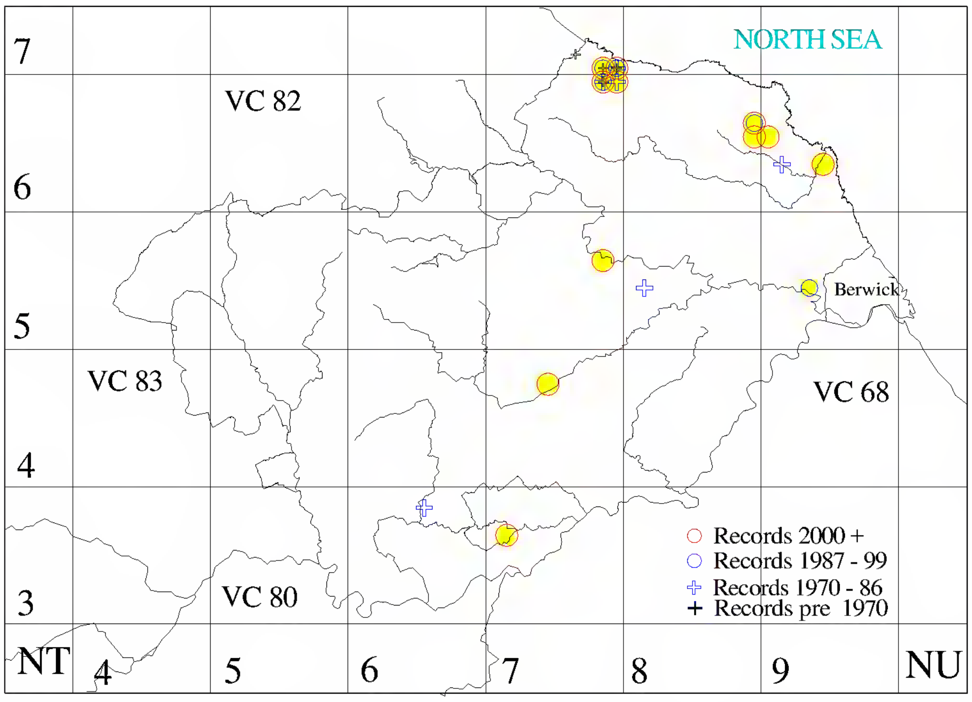
Polystichum aculeatum is a fern that is common only in the uplands of Britain where it is characteristic of steep wooded valleys and gorges with a base-rich substrate. It grows on moist banks and rocks. The Berwickshire distribution is mainly lowland, as that is where suitable habitat occurs. It is now very often accompanied by *Phyllitis scolopendrium* Hart's-tongue Fern, following the spread of that species.

It is possible that *P. aculeatum* has been increasing in abundance, but this is a subjective impression. It is not known whether any of the recently discovered sites represent recent colonisation.

Polystichum setiferum Soft Shield-fern

Woodland, native, rare or scarce

Berwickshire 1987-2013	9¼ sites	2% tetrads	35% hectads
Britain 1987-1999		19% tetrads	38% hectads



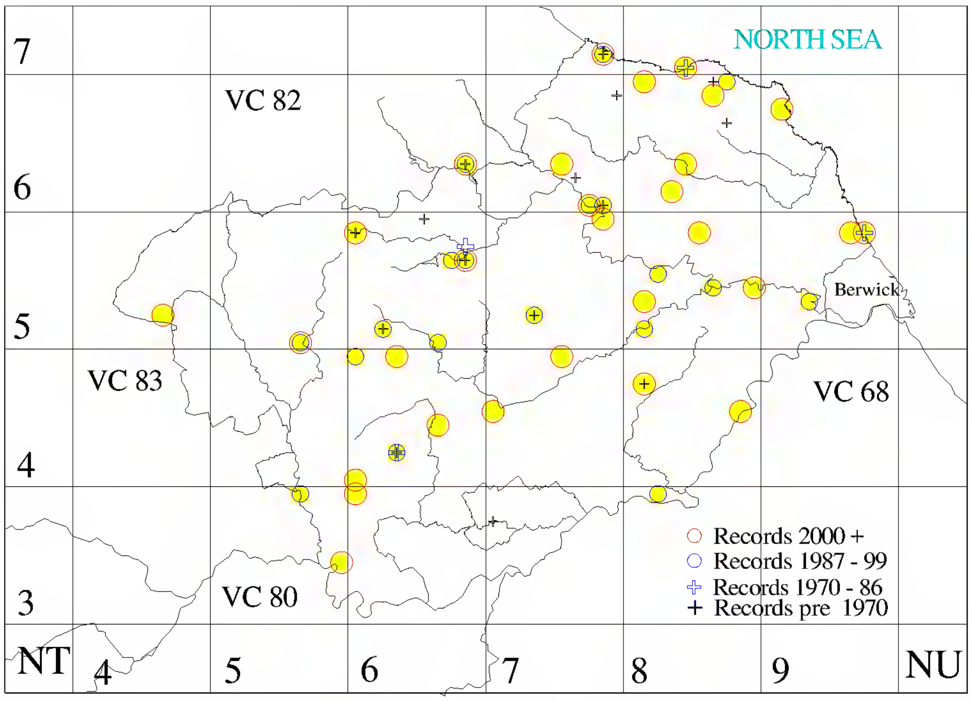
Polystichum setiferum is plentiful in south-west Britain but scarce elsewhere. Its distribution has been expanding in recent decades. It is found in damp woodland, often on basic soils.

It is near the limit of its range in Berwickshire and most at home near the coast. It has long been known in Pease and Tower Deans 76, 77 but the population there has expanded dramatically in recent decades from the confines of the gorge to much more open wooded banks. Meanwhile small colonies have been discovered more widely and there is a suspicion that most represent recent colonisation. They are by the Eden Water at Newton Don 73, possibly as a naturalised introduction, by the Blackadder Water near Lintmill Bridge 74, by the Buskin Burn 86, by the Lambsmill Burn 95 and near Netherbyres 96, possibly as a naturalised introduction. In all of the localities it is accompanied by *P. aculeatum* Hard Shield-fern and, in ten monads, with the hybrid between them. It is curious that *P. setiferum* is absent from the Berwickshire half of Dunglass Dean 77, though a few plants have been seen on the East Lothian bank of the burn, but only in apparently suboptimal habitat above the main dean.

Populus tremula Aspen

Woodland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	12% tetrads	78% hectads
Britain 1987-1999		34% tetrads	68% hectads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✣ Records 1970 - 86
+ Records pre 1970

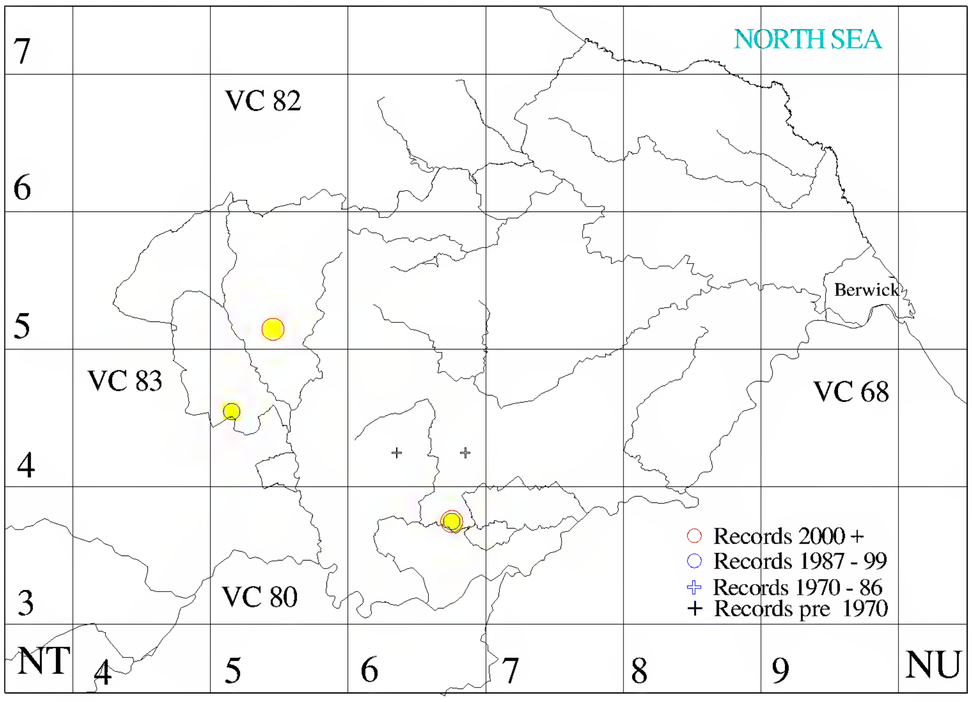
Populus tremula is a widespread tree in Britain, but local in some areas, particularly in the north. In the north its habitat is mainly cliffs and rocky knowes. Its distribution as a native in Berwickshire has been obscured by widespread introduction, particularly in recent years, following concerns for the future of this dioecious tree, so many of whose colonies were single-sex clones.

The native colonies can still be identified in the field with reasonable confidence by the extent of their suckering. They are few in number and almost all are located in the uplands or on the coast on rocky substrates, sometimes with juniper and *Rosa pimpinellifolia* Burnet Rose. Most of the monads with records from multiple dateclasses are native. Typical colonies are in Threeburnford Cleugh 45, on a cliff by the Blythe Water 55, as a large grove in birch woodland at Gordon Moss 64, at Heron's Scaur, Byrecleugh 65, near Rathburne 65, below Cranshaws Smithy 66, on rocks at Elba 76, on rocks at Cove Harbour 77 and on the Lamberton sea cliffs 95. The colonies recover from suckers if there is felling, so no recent losses are known.

Potamogeton alpinus Red Pondweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1½+1 sites	0.9% tetrads	13% hectads
Britain 1987-1999		1% tetrads	8% hectads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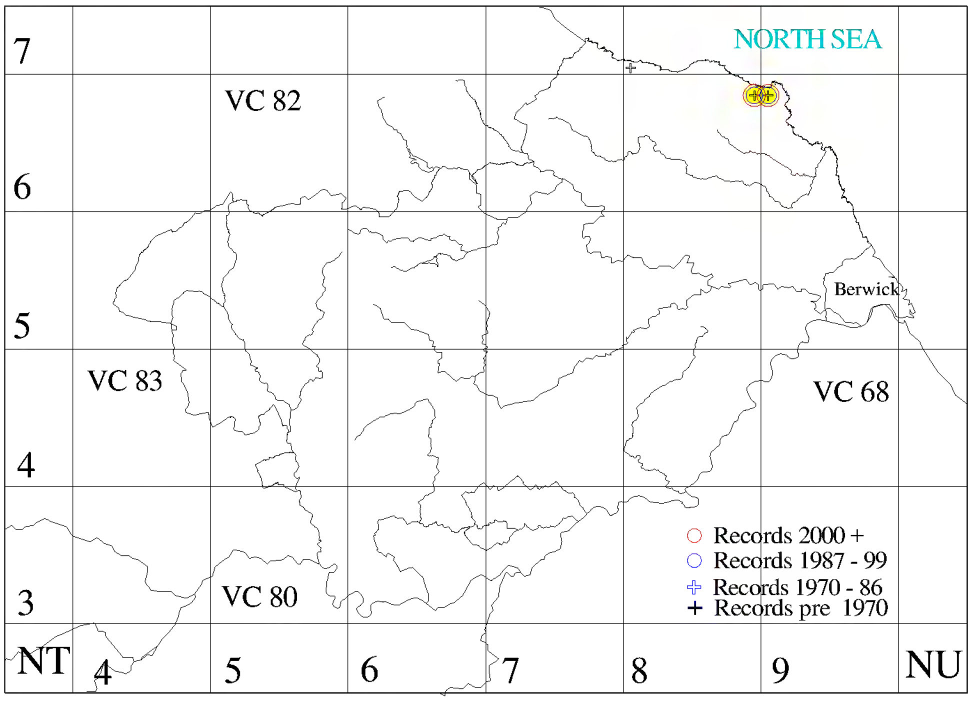
Potamogeton alpinus is a local species of northern Britain. It grows in silt in still or slow-moving water.

It has always been scarce in Berwickshire. The only colony in a natural habitat was in the upper Lauder Burn 54 where it grew with *Apium inundatum* Lesser Marshwort, but it could not be refound there in 2012 or 2013. It is present in a recently constructed pond at Earns Cleugh 55, where it may have been introduced, and in a pond a Nenthorn House 64 which is fed from the Eden Water where *P. alpinus* was once known.

Potamogeton filiformis Slender-leaved Pondweed

Aquatic, native, rare or scarce, British scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		0.4% tetrads	4% hectads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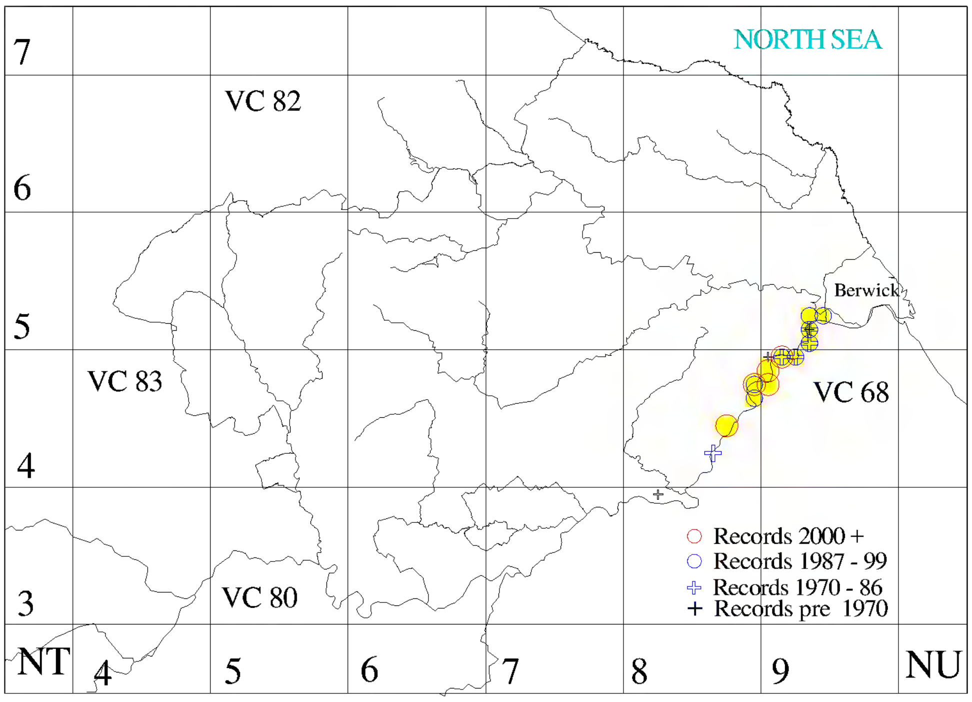
Potamogeton filiformis is a scarce northern plant in Britain that is most frequent in Orkney and Shetland. It has only one English locality. It is found in shallow base-rich waters.

In Berwickshire it has long been known in Coldingham Loch 86, where it has been much reduced in abundance in recent years due to unrestrained weed-cutting by the put-and-take trout fishery. It also grows in Millar's Moss 96, a small reservoir nearby.

Potamogeton lucens Shining Pondweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	6¾ sites	2% tetrads	13% hectads
Britain 1987-1999		1% tetrads	9% hectads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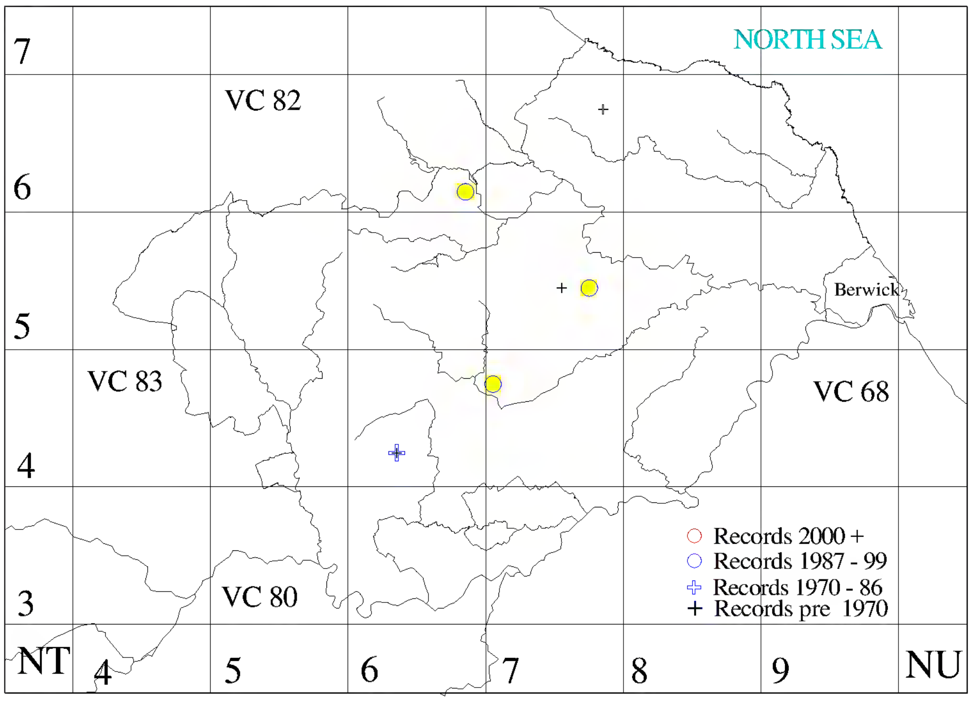
Potamogeton lucens grows in slow-moving calcareous waters, mainly in south-east England.

The River Tweed population is notable in a Scottish context but is only modestly extensive. *P. lucens* is much less plentiful than its hybrid with *P. perfoliatus* Perfoliate Pondweed. There has been little change in its distribution since Nigel Holmes' baseline survey of the river Tweed and its tributaries in 1971. There are good colonies at Milne Graden 84 and below Blount Bank 84, 94.

Potamogeton obtusifolius Blunt-leaved Pondweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1 site	0.9% tetrads	13% hectads
Britain 1987-1999		2% tetrads	11% hectads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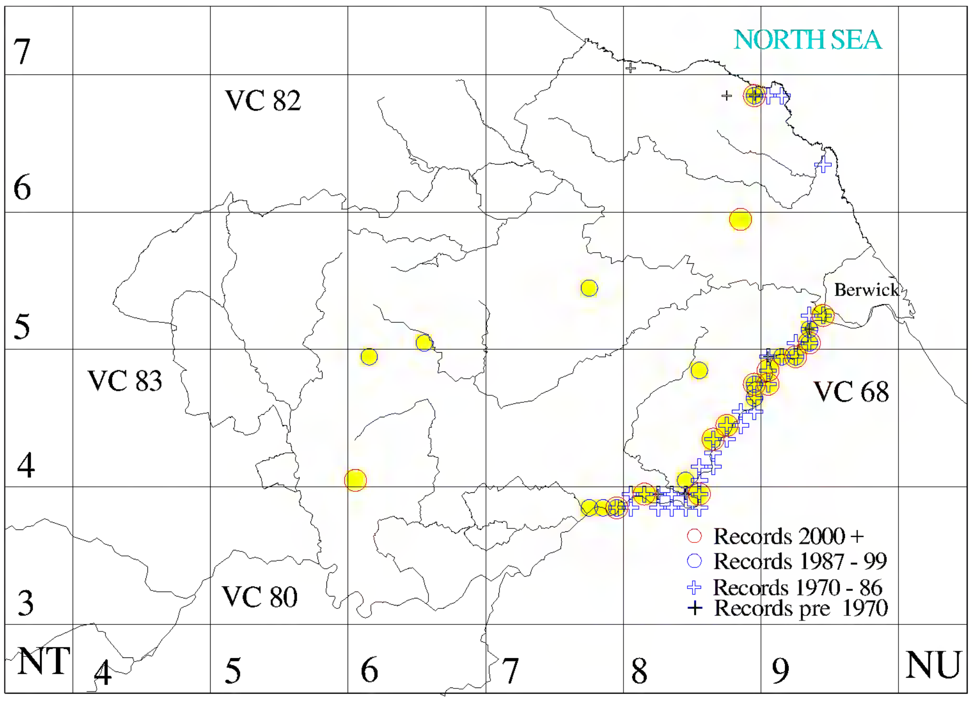
Potamogeton obtusifolius has a scattered distribution in Britain and is usually found in fairly acid standing waters.

Its Berwickshire distribution suggests a weedy species that can colonise a site, flourish for a while and then die out. It was abundant in a pond at Greenlawdean 74 in 1998 but appeared absent in 2013. There has been a similar failure to refind populations at Cranshaws 66 and the Hen Poo at Duns Castle 75.

Potamogeton pectinatus Fennel Pondweed

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	43% hectads
Britain 1987-1999		9% tetrads	32% hectads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✚ Records 1970 - 86
+ Records pre 1970

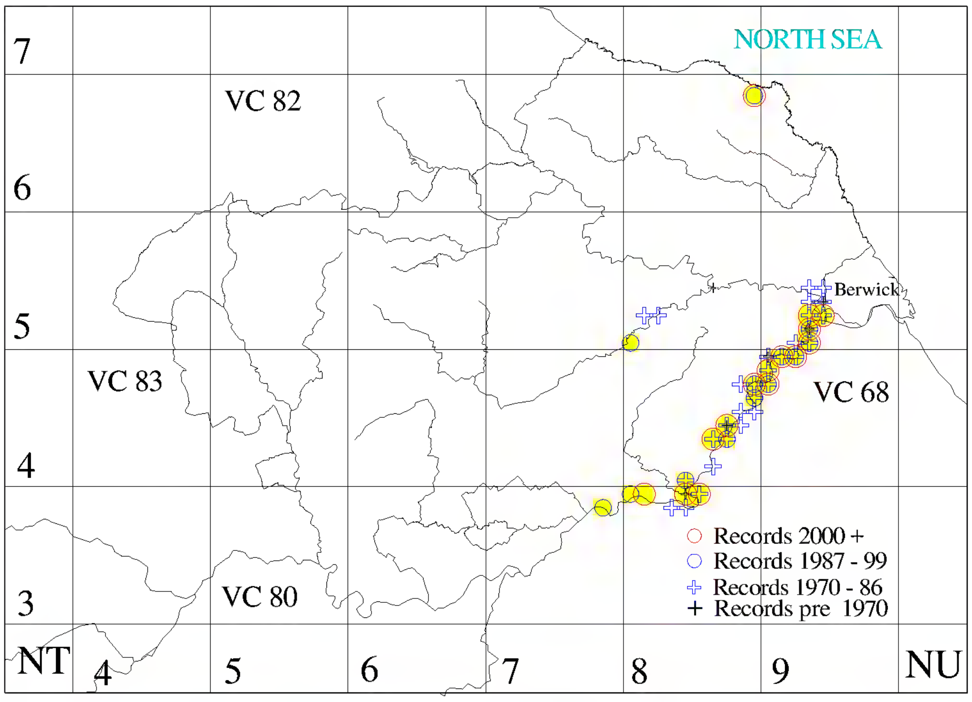
Potamogeton pectinatus is widespread in England, especially in the east but is much scarcer in Scotland. It is a plant of eutrophic or brackish water. In Berwickshire it has maintained its range in the River Tweed downstream from Birgham 73 where it is indicative of a diverse flora. It is also known from Coldingham Loch 86 but is more or less casual elsewhere.

Its abundance in the Tweed appears to have declined sharply. This is attributed to excessive weed control by fishing interests. If this policy was reversed this species might re-colonise quite rapidly.

Potamogeton perfoliatus Perfoliate Pondweed

Aquatic, native, Berwickshire fine

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		5% tetrads	25% hectads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Potamogeton perfoliatus is rather local in Britain. It is well able to thrive in eutrophic water and in Berwickshire it remains frequent in the lower section of the River Tweed where it is a key component of the rich aquatic flora.

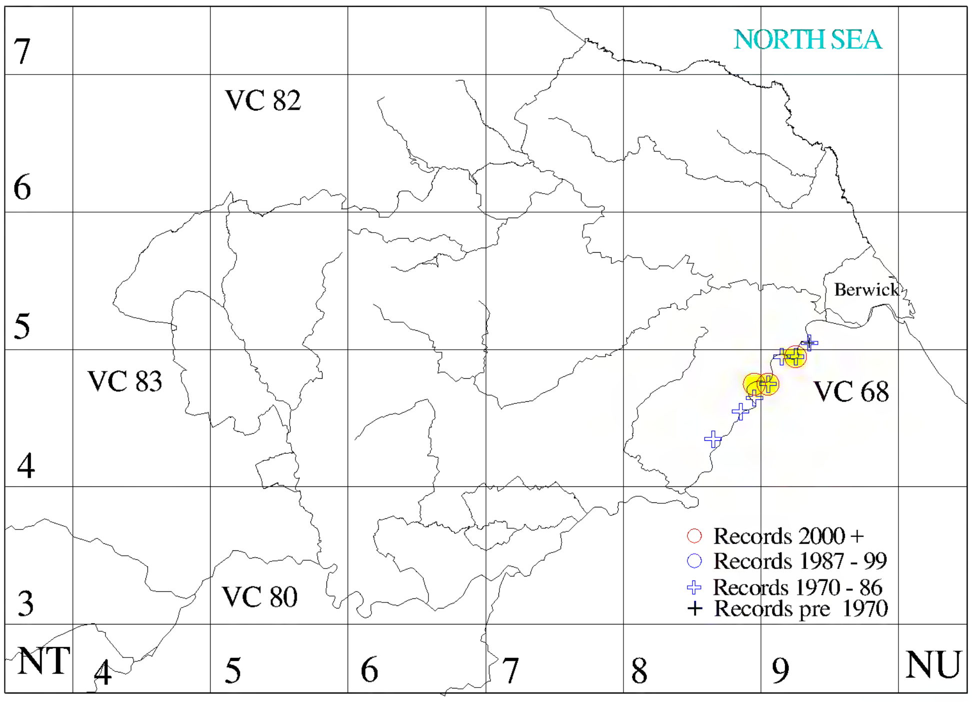
Its abundance appears to have declined sharply in the Tweed as a result of excessive weed control by fishing interests. If this policy was reversed this species might re-colonise quite rapidly. Former colonies in the Blackadder and lower Whiteadder Waters have not been refound.

***Potamogeton pectinatus* and *P. perfoliatus* on surface with *P. x salicifolius* below**
River Tweed at Ladykirk 1999

Potamogeton x bottnicus = P. pectinatus x vaginatus Bothnian Pondweed

Aquatic, native, rare or scarce, British rare

Berwickshire 1987-2013	3¾ sites	0.9% tetrads	9% hectads
Britain 1987-1999		0.01% tetrads	0.2% hectads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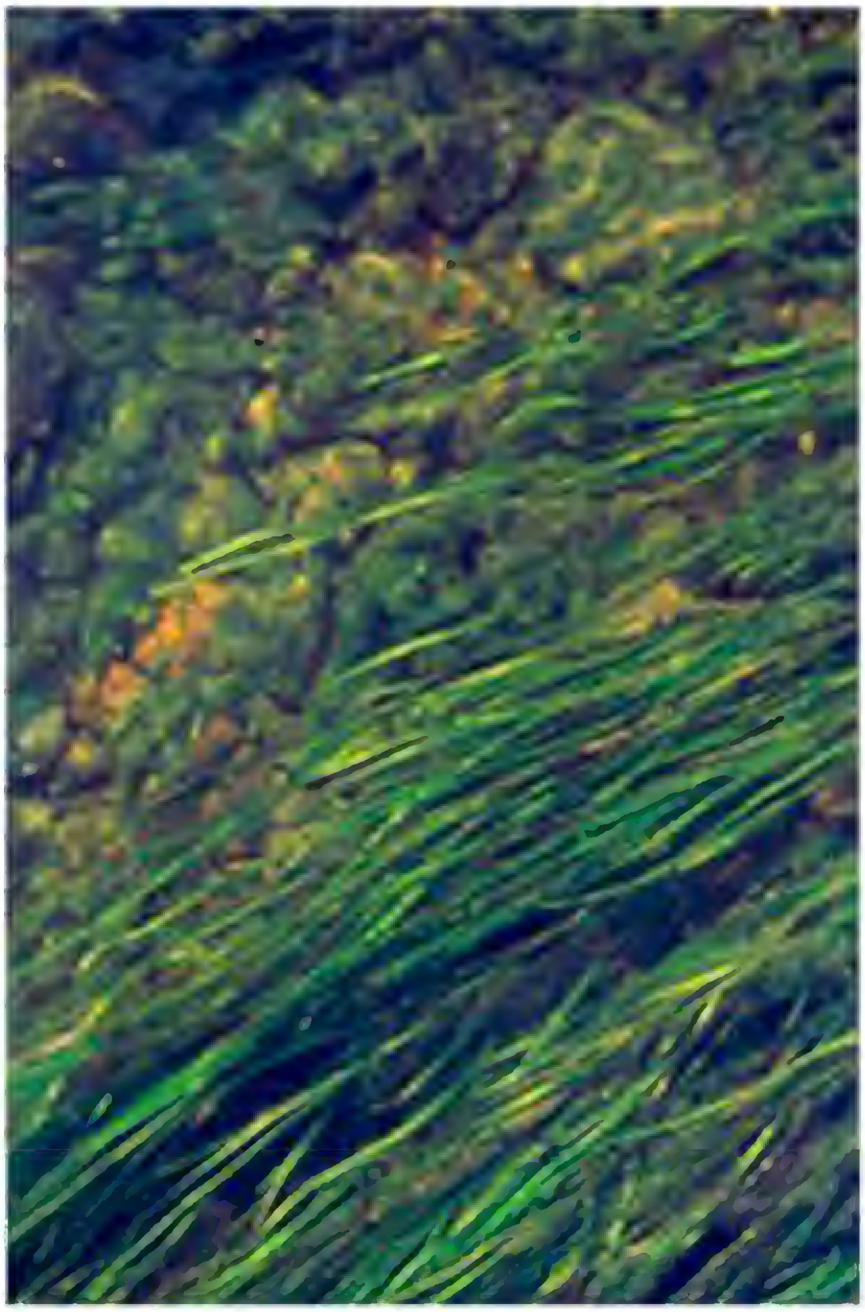
Potamogeton x bottnicus is a rare plant of lowland rivers on a gravelly substrate. The origin of this hybrid as that between *P. pecinatus* Fennel Pondweed and the non-British *P. vaginatus* has only been elucidated in Britain since the publication of the New Atlas (Preston *et al.* 1998). It was previously considered a variety of *P. x suecicus (P. filiformis x pectinatus).* It occurs in the rivers Till and Tweed.

The 1971 survey found it (identified as *P. x suecicus*) to be rather more widespread than recent records suggest. It is currently known in relatively shallow running water over coarse gravel with boulders on rock outcrops below Blount Bank 84 and on the south side of St Thomas's Island below Fishwick Mains 94 (the whole island lies in Scotland).

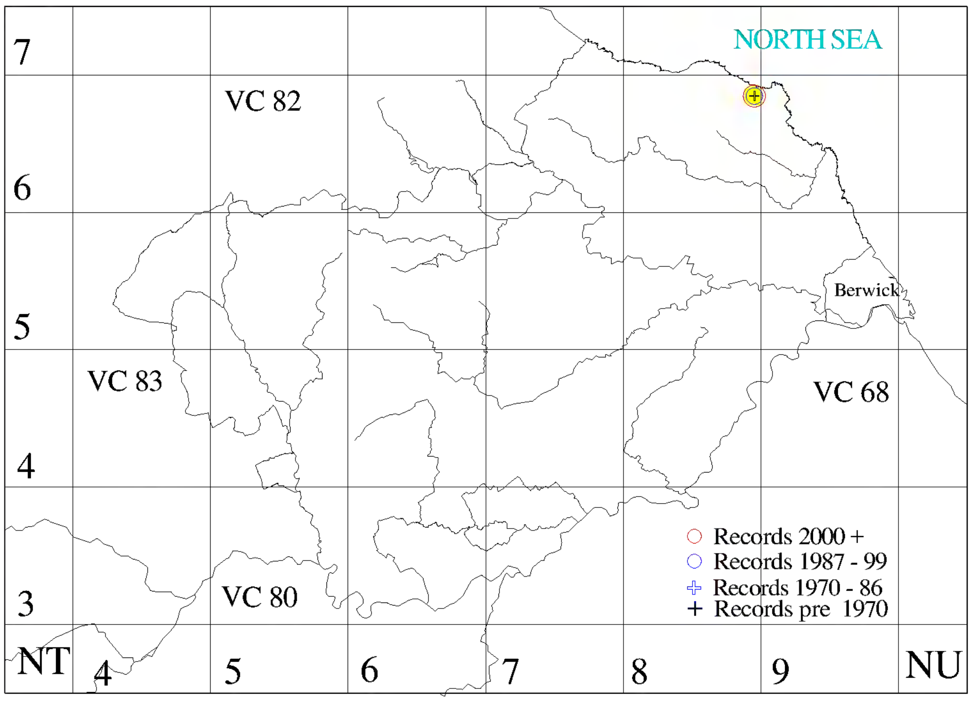


Potamogeton x bottnicus
St Thomas's Island
2003

Potamogeton x nitens = P. gramineus x perfoliatus Bright-leaved Pondweed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.5% tetrads	5% hectads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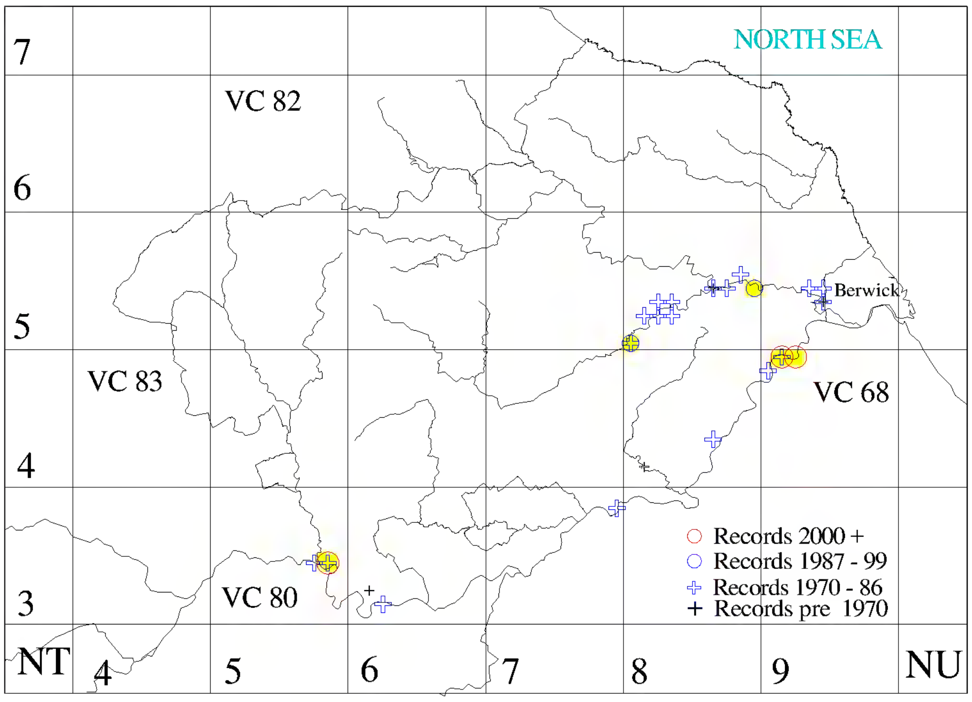
The sites of *Potamogeton x nitens* are thinly scattered over northern Britain. They are generally mesotrophic water bodies.

It has long been known at Coldingham Loch 86 and is still present, but is not thriving due to unrestrained weed-cutting by the put-and-take trout fishery.

Potamogeton x olivaceus = P. alpinus x crispus Graceful Pondweed

Aquatic, native, rare or scarce, British scarce

Berwickshire 1987-2013	3¼ sites	2% tetrads	13% hectads
Britain 1987-1999		0.04% tetrads	0.5% hectads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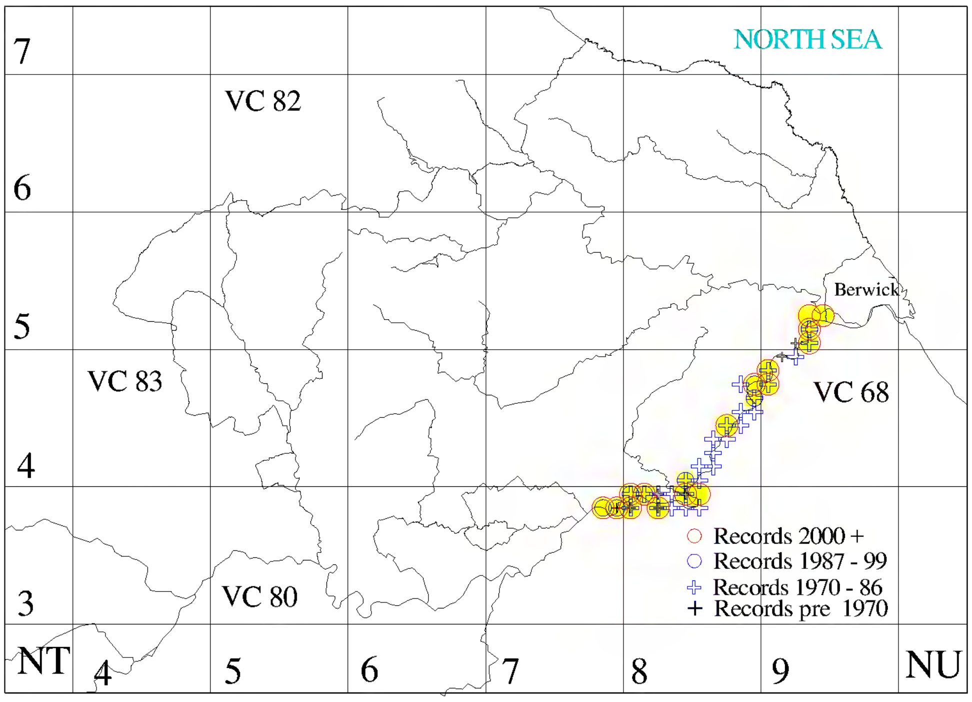
Potamogeton x olivaceus grows in lowland mesotrophic rivers and is only known away from the Tweed and its tributaries in the Rivers Earn and Ythan and the River Teifi in Wales.

Recent recording suggests a major decline in Berwickshire since the surveys of the 1970's. The only post-2000 records are from Gledswood 53 and below Fishwick Mains 94, where it was only seen in small quantity. It may still be at Kimmerghame on the Blackadder Water 85 where it was recorded in 1998 and in the mill lade at Edington Mill 85 where it was seen in 1999 before that site was extensively redeveloped as housing.

Potamogeton x salicifolius = P. lucens x perfoliatus Willow-leaved Pondweed

Aquatic, native, British scarce, Berwickshire fine

Berwickshire 1987-2013	13¼ sites	3% tetrads	22% hectads
Britain 1987-1999		0.1% tetrads	1% hectads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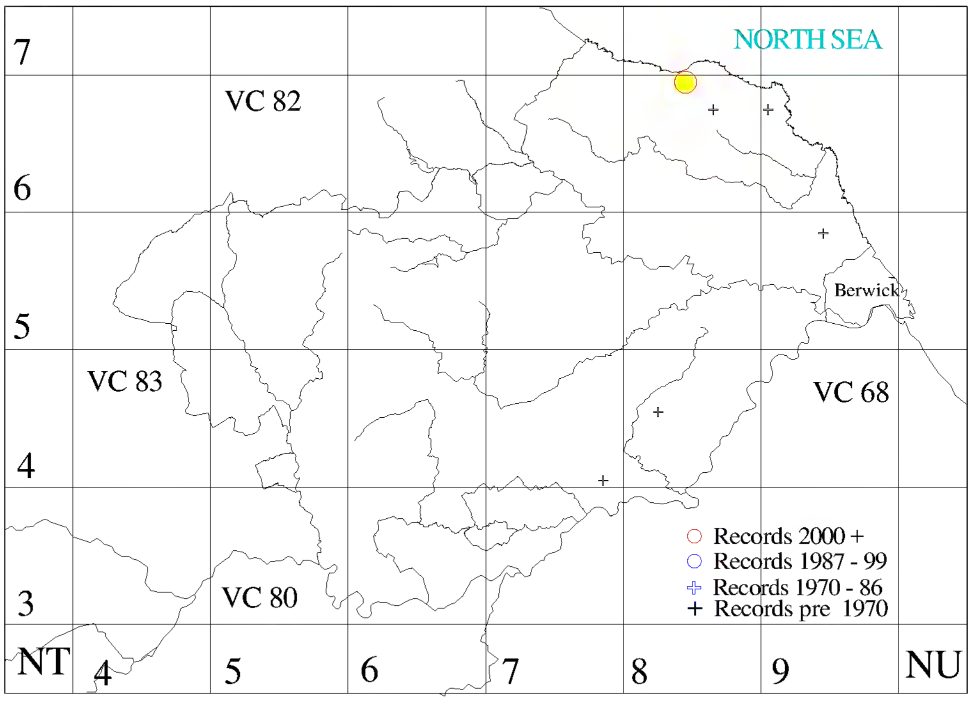
Potamogeton x salicifolius has a localised distribution in Britain. Berwickshire is one of its strongholds. It has declined greatly in in southern Britain. It grows in slow-moving calcareous waters.

This robust hybrid is the most prominent of the *Potamogeton* taxa in the River Tweed in Berwickshire and is present more or less throughout the range where it was recorded in the 1970's from Lochton 73 to the English Border below Paxton House 95 where the water is slightly brackish. However, because of its prominence, it is much cut-back by the salmon fishing interests.

Potentilla anglica Trailing Tormentil

Moorland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		15% tetrads	30% hectads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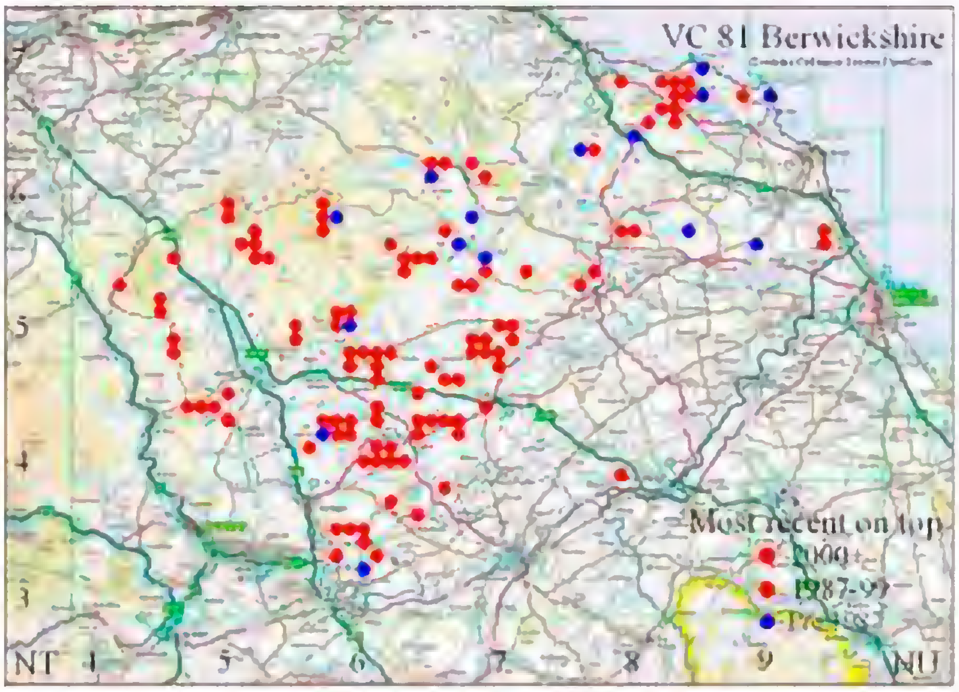
Potentilla anglica is widespread in south-western Britain where it grows in heaths and dry woodland edges.

It had been thought extinct in Berwickshire, but a few plants were found near Dowlaw Moss 86 in 2005.

Potentilla palustris (Comarum palustre) Marsh Cinquefoil

Wetland, native, other axiophyte

Berwickshire 1987-2013	9% monads	23% tetrads	74% hectads
Britain 1987-1999		21% tetrads	46% hectads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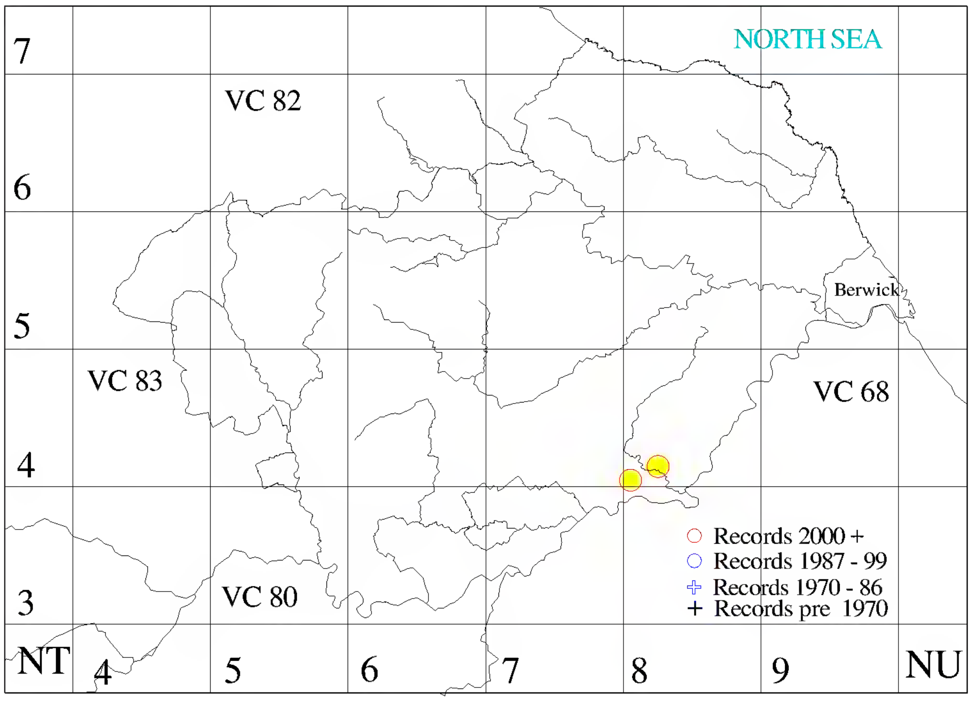
Potentilla palustris is very widespread in Scotland, northern England and Wales. It is a fen plant preferring shallow water but persisting in partly drained habitat and requiring only a trace of mineral enrichment. It is widespread in Berwickshire but many of the populations are poor remnants that seldom flower indicating the location of former wetland rather than viable habitat units. There is a notable concentration of records in the Gordon area 64 marking the formerly fine series of wetlands there. The complex of wetlands at Dowlaw Moss, Drone Moss and Long Moss 86 is also prominent.

As indicated, this is a very persistent species and the rather severe and continuing losses in abundance are not apparent at 1km scale. The only evidence of recent colonisation is along the shores of Watch Water Reservoir 65 since it was constructed in 1954, though it may grow at the margins of recently-constructed ponds in wetlands where it was already present.

Potentilla x mixta = P. anglica x reptans A hybrid Cinquefoil

Moorland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	4% hectads
Britain 1987-1999		2% tetrads	13% hectads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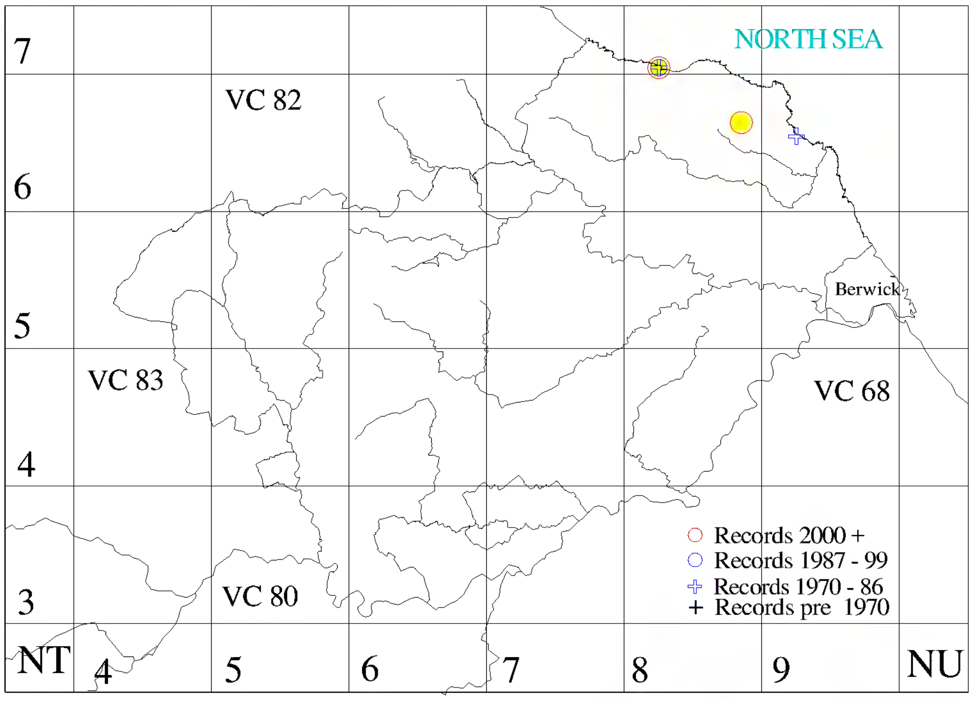
Potentilla x mixta is widely scattered in England where it is found in dry grassland and woodland rides.

The two Berwickshire records are from woodland rides at Liththillum Wood 84 and Hirsel Woods 84. This is an area which was once sandy heathland.

Primula florindae Tibetan Cowslip

Wetland, neophyte

Berwickshire 1987-2013	2 sites	1% tetrads	9% hectads
Britain 1987-1999		0.1% tetrads	1% hectads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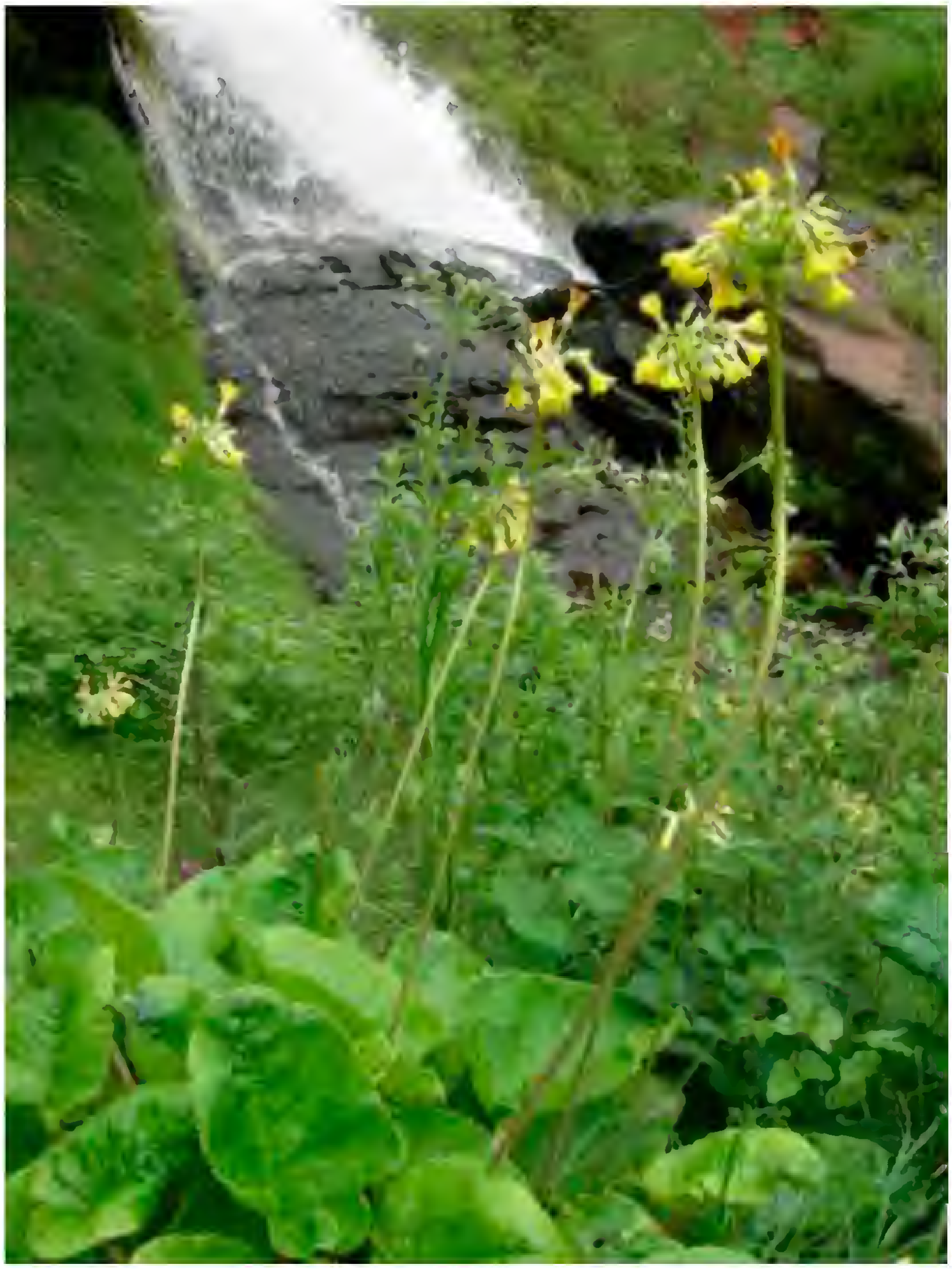
Primula florindae is a popular garden plant that can naturalise if the ground is wet enough. It has seldom been reported from the wild in Britain.

Two colonies are known in Berwickshire. There is a small one by the burn below Silverwells 86, which has had several enthusiastic gardening owners. In the 1970's it was more plentiful by this burn, with colonies at intervals to the sea below Fleurs Dean 96. A much more spectacular colony today is below a waterfall on the coast in the dean at Redheugh 87. *Impatiens glandulifera* Indian Balsam has unfortunately also been introduced to the burn and may soon overwhelm the *Primula.*

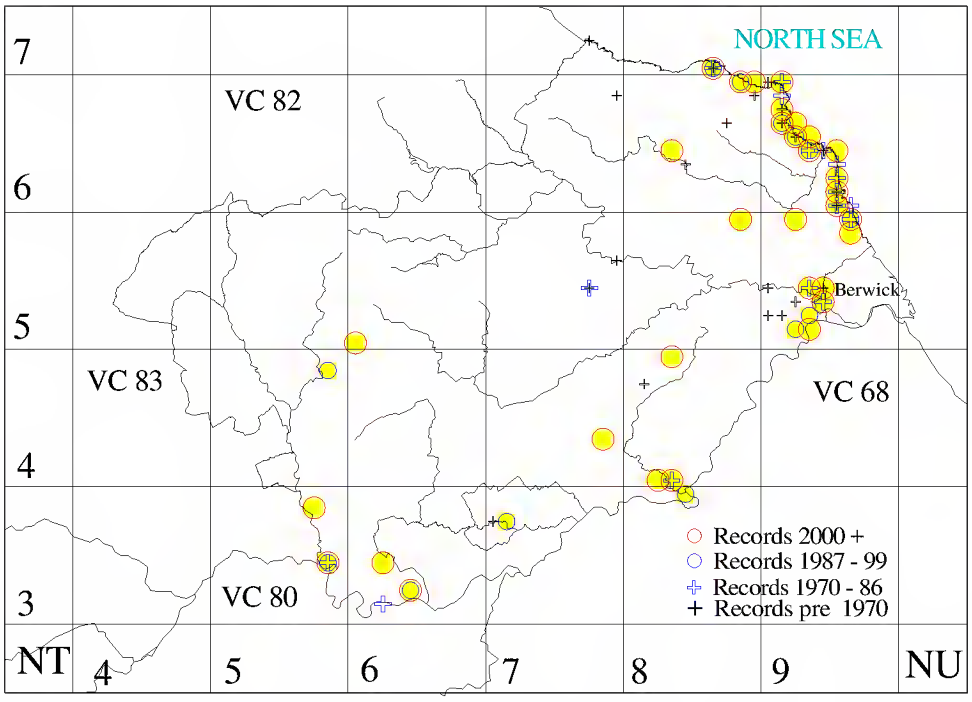


Primula florindae **in the dean at Redheugh 2012**

Primula veris Cowslip

Coast, native, selected axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	57% hectads
Britain 1987-1999		30% tetrads	51% hectads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Primula veris, so widespread in England and Wales, is rather scarce in Scotland with a markedly eastern distribution. This matches the Berwickshire situation. On the coast *P. veris* is very often associated with *Orchis mascula* Early-purple Orchid, but is rather less frequent. Like the orchid, it is much scarcer than the distribution map suggests and has suffered recent losses, especially to the immediate south of Eyemouth 96.

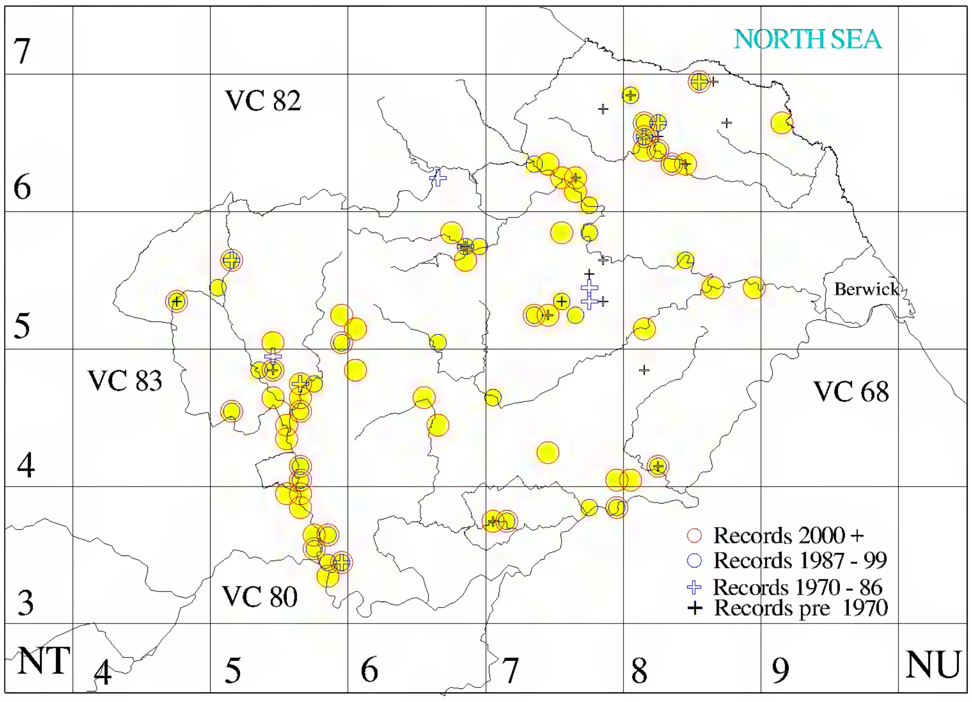
Inland, the decline is obscured by introductions, sometimes of large cultivar forms. There are only a few native colonies, as at Dalcove 63 and Butchercote Craigs 63. The small colonies on banks by the lower Whiteadder 95 are under more or less immediate threat from the spread of scrub and the eutrophication of woodland edges.

P. x polyantha, the hybrid with *P. vulgaris* Primrose, is frequent and has been recorded from 16 monads.

Prunus padus Bird Cherry

Woodland, native, Berwickshire fine

Berwickshire 1987-2013	6% monads	17% tetrads	61% hectads
Britain 1987-1999		19% tetrads	39% hectads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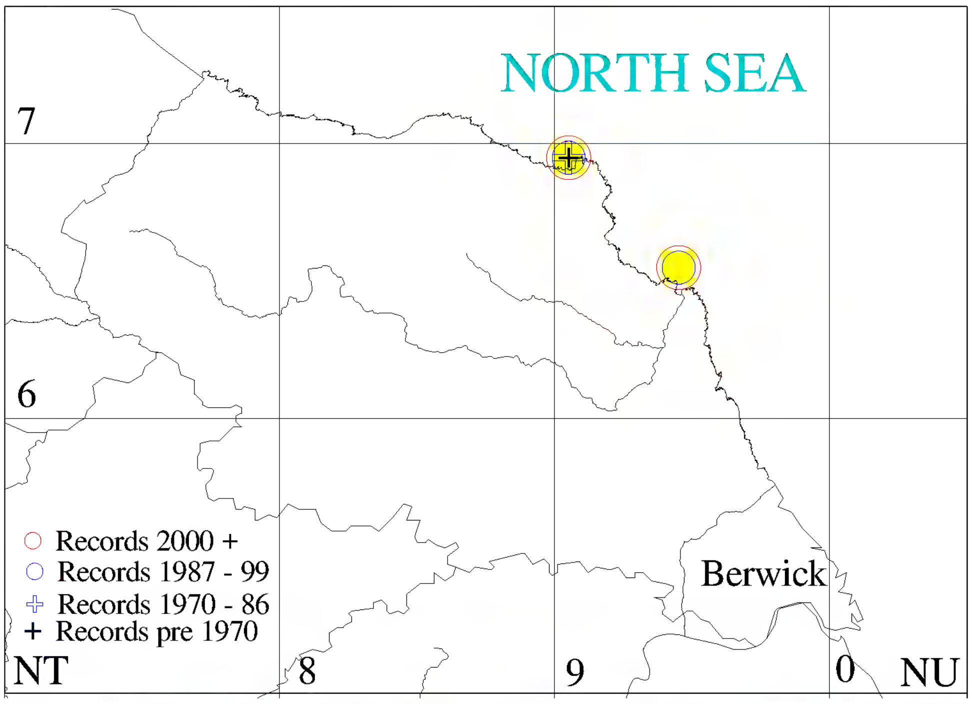
Prunus padus is most frequent in the north half of England and the south half of Scotland where it is widespread. It is a small tree of wet base-rich soils by rivers and burns. It is also a frequent planted tree. In Berwickshire the native distribution is as yet only slightly obscured by introductions. When in flower in May it is a landscape feature along the Leader Water 53, 54, even though the majority of colonies are hidden by steep slopes, around Abbey St Bathans 76 and around Grantshouse 86. It is scarce elsewhere in the uplands. All the lowland records are thought to relate to introductions, though it is occasionally impossible to be dogmatic, as at Birgham Haugh 73.

This species perpetuates itself by layering and suckering and is thus very resilient to felling and there is no evidence of recent losses. Seedlings are sometimes observed not far from mature trees, but longer-distance dispersal seems to be very rare.

Puccinellia distans subsp. borealis Northern Saltmarsh-grass

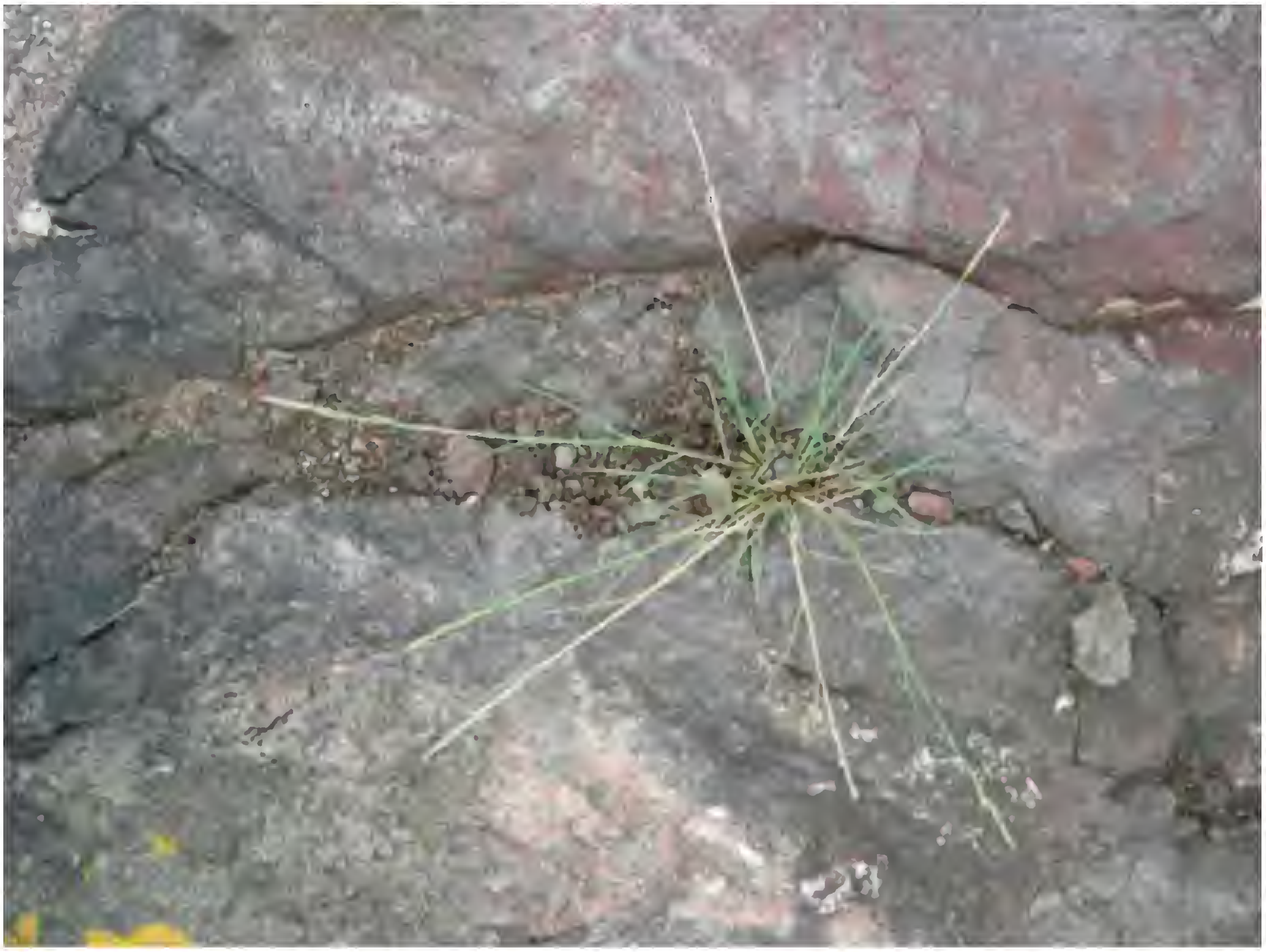
Coast, native, rare or scarce

Berwickshire 1987-2013	3 sites	0.6% tetrads	4% hectads
Britain 1987-1999		0.3% tetrads	3% hectads



Puccinellia distans subsp. borealis is a local grass almost confined to the east coast of Scotland.

The two Berwickshire colonies are at the southern limit of its distribution. It is found on a small rocky beach and on a ledge of a sea stac at Petticowick, St Abbs Head 96. It occurs again at Hairy Ness, Eyemouth 96 where the plants grow on a promontory at 20m altitude on a slight accumulation of sand and stones over bare rock in a largely vegetation-free amphitheatre.

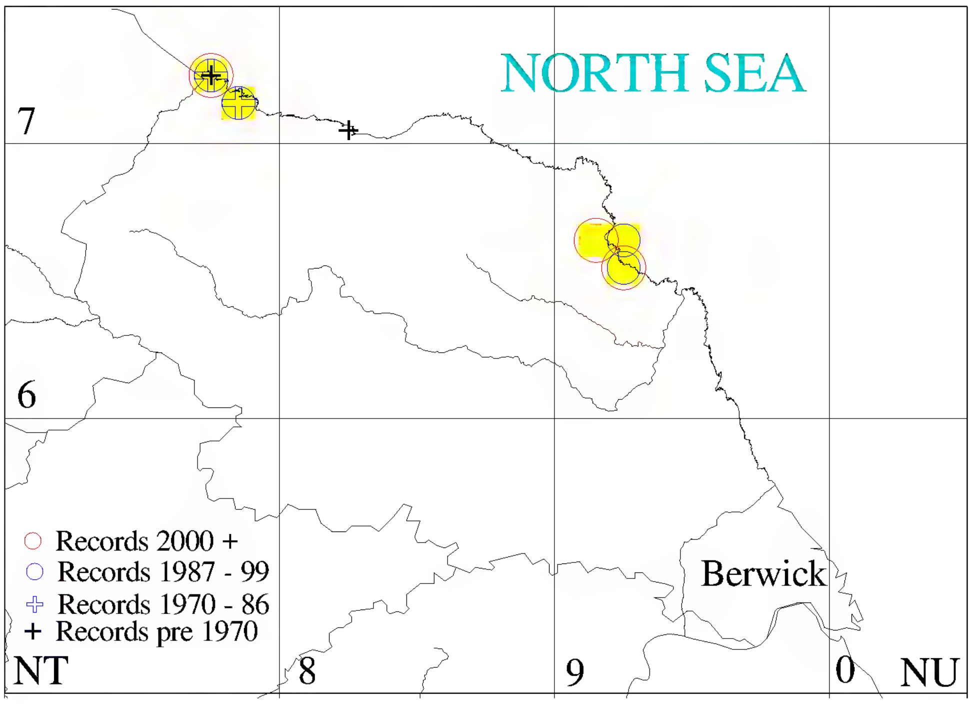


***Puccinellia distans subsp. borealis* at Hairy Ness 2010**

Puccinellia maritima Common Saltmarsh-grass

Coast, native, rare or scarce

Berwickshire 1987-2013	3½ sites	2% tetrads	9% hectads
Britain 1987-1999		5% tetrads	21% hectads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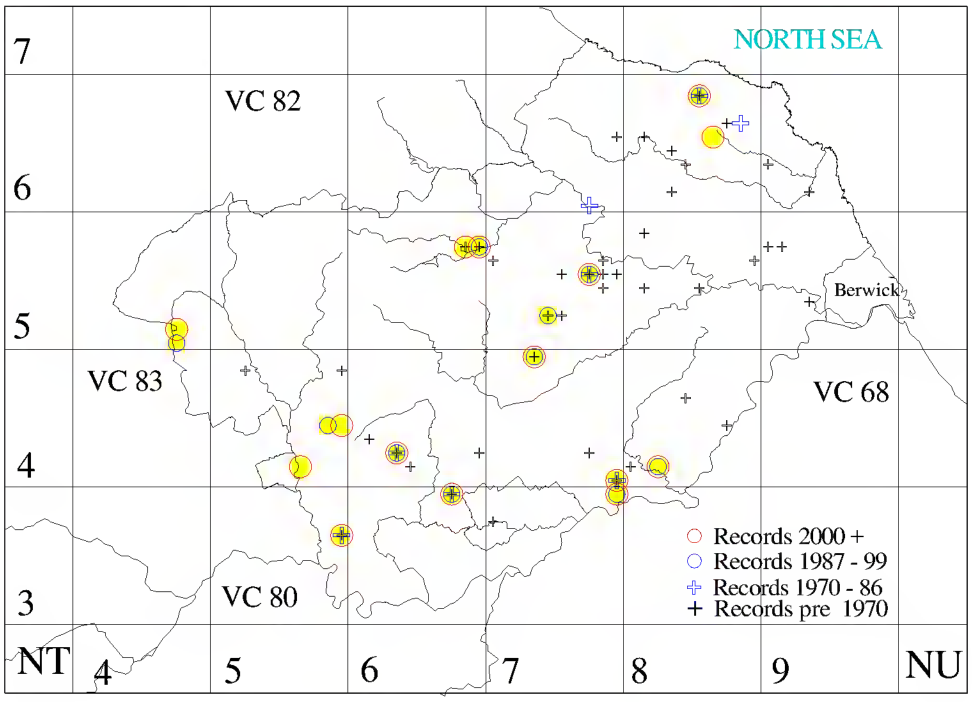
Puccinellia maritima is a common grass in saltmarsh found round much of the British coast.

It is very poorly represented in Berwickshire due to the almost complete absence of saltmarsh. Small colonies occur at Ramsheugh Bay 77, Cove Harbour 77 and Coldngham Bay 96 with a rather larger colony in the rock pools at Yellow Craig 96.

Pyrola minor Common Wintergreen

Woodland, native, rare or scarce

Berwickshire 1987-2013	13 sites	4% tetrads	48% hectads
Britain 1987-1999		1% tetrads	9% hectads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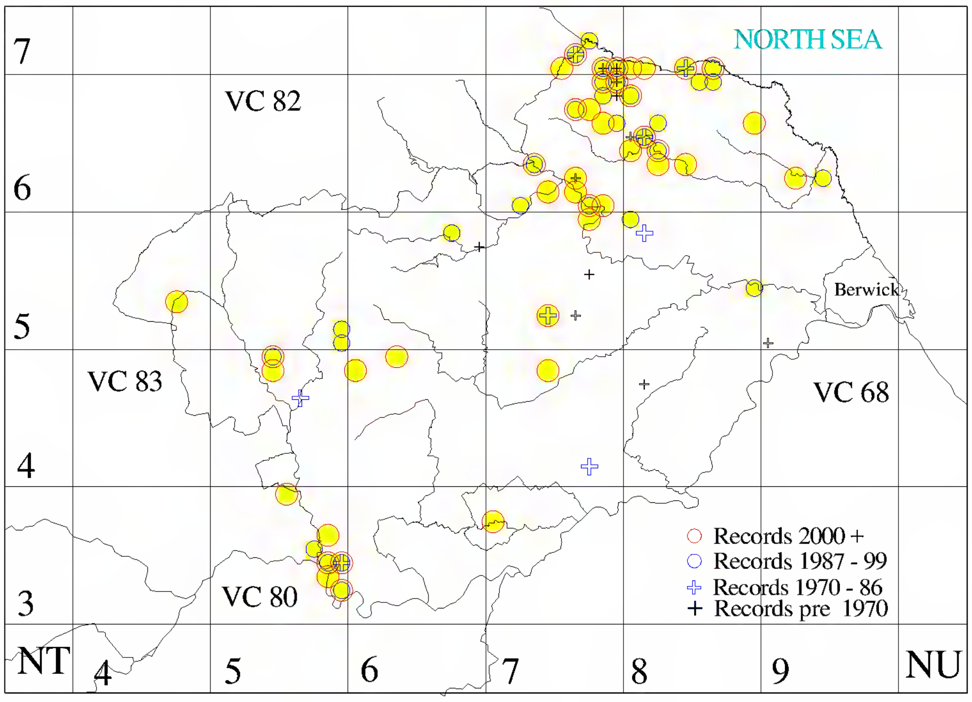
Pyrola minor is found mainly in northern England and Scotland, but not in the extreme north and west. It grows in mossy habitats in woods and on scrubby moorland.

It has an interesting history in Berwickshire. Many of the colonies today are in mosses which have been colonised by woodland, though it was not known at any of these in the nineteenth century. The best such sites are Pickie Moss 54, Lurgie Loch 63, Gordon Moss 64 and Long Moss 86. It is also found in woodland, not necessarily where there is an ancient woodland ground flora. Sites include a large colony under beech at Longformacus Strip 65 and a very large colony at Birgham Wood 73, mainly under oak and birch. There are small colonies growing with *Vaccinium myrtillus* Bilberry under beech at Blaeberry Plantation 74 on the edge of Greenlaw Moor and in several places in the woods at Duns Castle 75. It is extinct at many of its historical localities. This history, together with the singular lack of clustering in the distribution map, suggests a slow cycle of colonisation and local extinction made possible by the tiny wind-dispersed seed.

Quercus petraea Sessile Oak

Woodland, native, other axiophyte

Berwickshire 1987-2013	5% monads	12% tetrads	65% hectads
Britain 1987-1999		32% tetrads	55% hectads



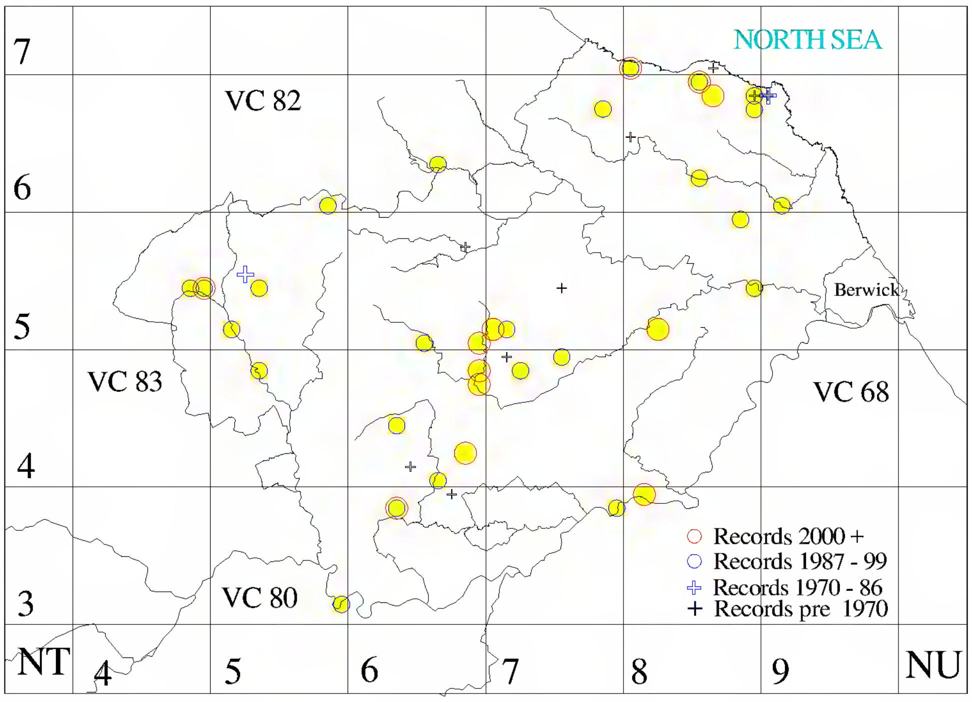
Quercus petraea is the dominant species in oakwoods on the western seaboard of Britain but is more local in the east, where *Quercus robur* Pedunculate Oak was once the dominant species, at least in southern England. *Q. petraea* has not been recorded systematically in Berwickshire. The main native oakwoods have been recorded as this species, generally ignoring arguable hybrids between the two native oaks which may be frequent or possibly dominant. Planted oaks, other than those reinforcing native stands, have generally been recorded as *Q. robur*, ignoring possibly frequent *Q. petraea*. Nevertheless the map provides an adequate portrayal of the main native oakwoods with their very restricted distribution around Abbey St Bathans 76 with more limited stands by the lower Leader Water 53, at Gaitheugh on the River Tweed 53, around Grantshouse 86 and in and around the Penmanshiel woods 86 where most were felled in the First World War. There are only a few stunted specimens on the coast itself.

The scattered records in the lowlands mostly relate to plantings.

Ranunculus aquatilis Common Water-crowfoot

Aquatic, native, other axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	78% hectads
Britain 1987-1999		6% tetrads	27% hectads



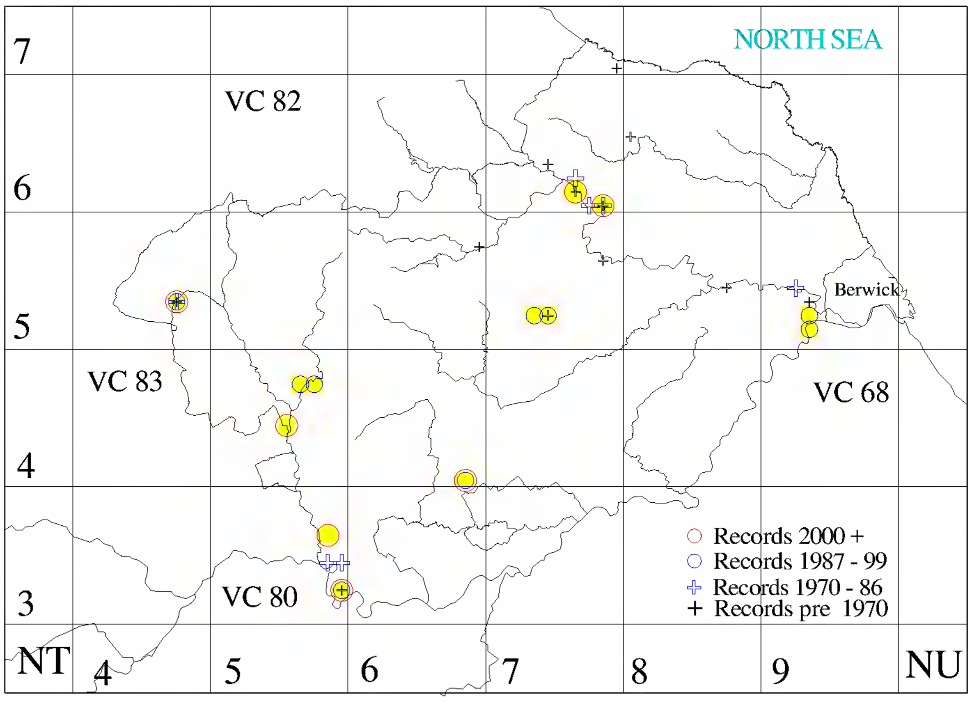
Ranunculus aquatilis is widespread in England but local in Scotland. It is found at the water's edge in a variety of situations and is fairly tolerant of eutrophication.

In Berwickshire it is found chiefly in ponds and oxbows beside burns. Some of the best colonies are in the Fangrist Burn 64. Recently-dug ponds are seldom colonised. It is probably in decline in the county, but some of the riverside colonies may be more or less casual and those in ponds may be subject to a cycle of colonisation and extinction. The exclusion of cattle from water margins is likely to be a major factor in its decline. Records from gravel by rivers in periods of low water levels might be errors for small forms of *R. pencillatus* Stream Water-crowfoot.

Ranunculus auricomus Goldilocks Buttercup

Woodland, native, rare or scarce

Berwickshire 1987-2013	9½ sites	3% tetrads	30% hectads
Britain 1987-1999		15% tetrads	37% hectads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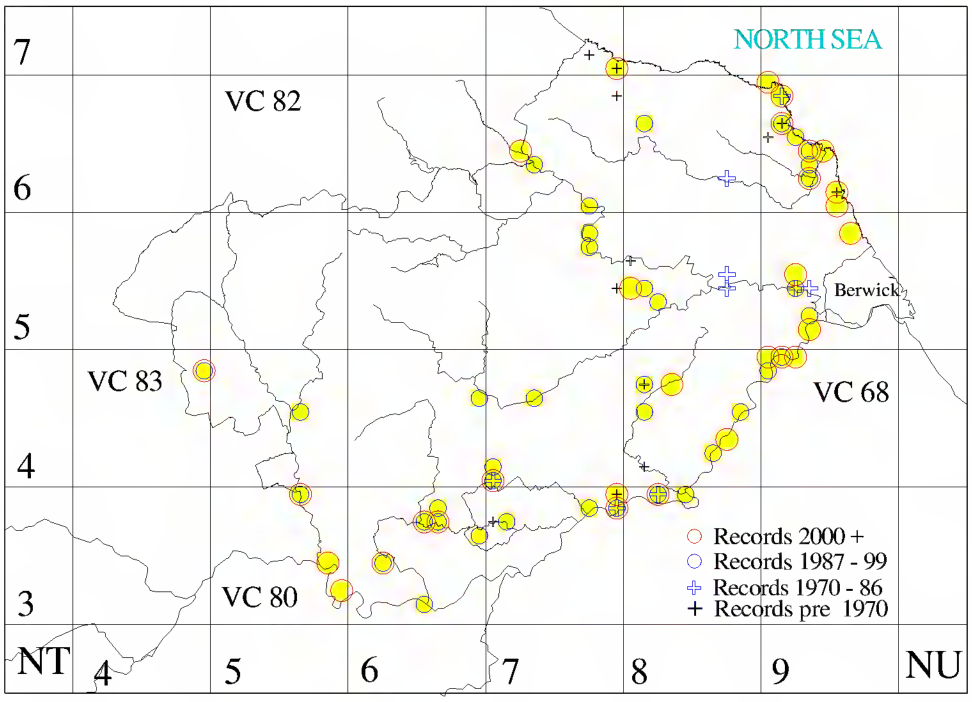
Ranunculus auricomus is a woodland herb of basic soils that is widespread in England but more local in Scotland.

It is extraordinarily scarce in Berwickshire compared to neighbouring Roxburghshire and appears to be declining. There is a moderately large population on the lower slopes of Airhouse Wood 45 and a few modest colonies lower down the Leader Water at Whitslaid 54 and Redpath Dean 53. It is on the Tweed at Dryburgh near the Chain Bridge 53. It persists on north-facing slopes at Hareheugh Craigs 64 despite the absence of woodland cover. There were formerly several colonies in the less-acid parts of the Abbey St Bathans oakwoods 76 but it is currently known only in Butterwell Wood and Elba Wood. It has not been seen recently at Paxton House 95 or nearby.

Ranunculus bulbosus Bulbous Buttercup

Grassland, native, other axiophyte

Berwickshire 1987-2013	5% monads	13% tetrads	74% hectads
Britain 1987-1999		51% tetrads	69% hectads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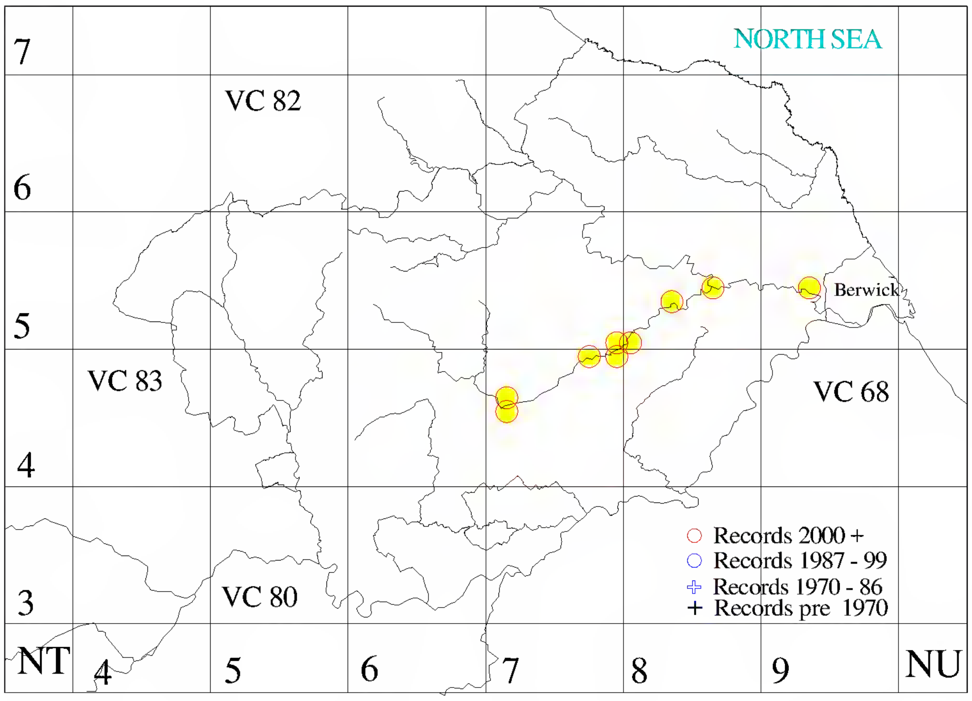
Ranunculus bulbosus is very widespread in England and Wales but much less so in Scotland. It is found in relatively fertile grasslands and has suffered severely at the hands of agriculture. In Berwickshire it is not found on the sea braes as such but may be present where there is adjacent grassland on more level ground, as at St Abbs Head 96. Similar considerations apply to the scraps of natural grassland by the main rivers. It is sometimes found in the parkland of the great houses where herbicide use may have been modest and has a particular penchant for the ridges of old ridge-and-furrow pasture as at Ladykirk House 84.

There is a strong suggestion of decline since the 1987-99 survey. Some of the outlying colonies, such as that near Whitlaw 45 could have been founded by impurities in nineteenth-century sowings of grass-seed mixtures. There is no evidence of recent colonisation.

Ranunculus circinatus x fluitans Greenlaw Water-crowfoot

Aquatic, native, rare or scarce, British rare

Berwickshire 1987-2013	8 sites	2% tetrads	17% hectads
Britain 1987-1999		0.01% tetrads	0.1% hectads



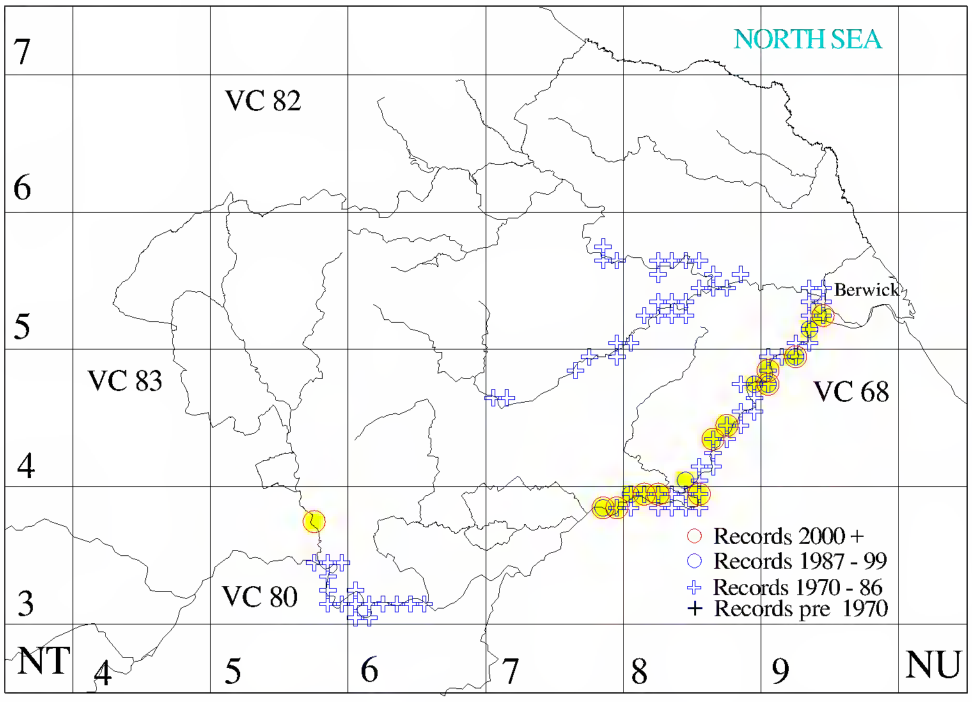
Ranunculus circinatus x fluitans is only known in Britain from the Blackadder Water in Berwickshire.

This plant was discovered by Nigel Holmes (Holmes and Whitton 1975). Plants of a hybrid water-crowfoot that differ from *R. x kelchoensis* are quite frequent in the Blackadder but their parentage is unresolved. While the few ultimate leaf segments suggested *R. fluitans* River Water-crowfoot as one parent, there were no characters to suggest *R. circinatus* Fan-leaved Water-crowfoot as the second parent and the plants are considered rather more likely to be a clone of the better known *R. x bachii* with *R. trichophyllus* Thread-leaved Water Crowfoot as the second parent. The flowers are smaller than those of *R. x kelchoensis* with petals 7-8mm long and are part-double with 5, 6 or 7 petal flowers on the same plant. The hybrid *Ranunculus* plants are found in the few stretches of the river with a steady shallow flow over a gravel bottom, often with some larger boulders and some rock outcrop. The plants seem to anchor at the larger boulders and may be long-lived in one place.

Ranunculus fluitans River Water-crowfoot

Aquatic, native, Berwickshire fine

Berwickshire 1987-2013	1% monads	4% tetrads	26% hectads
Britain 1987-1999		2% tetrads	9% hectads



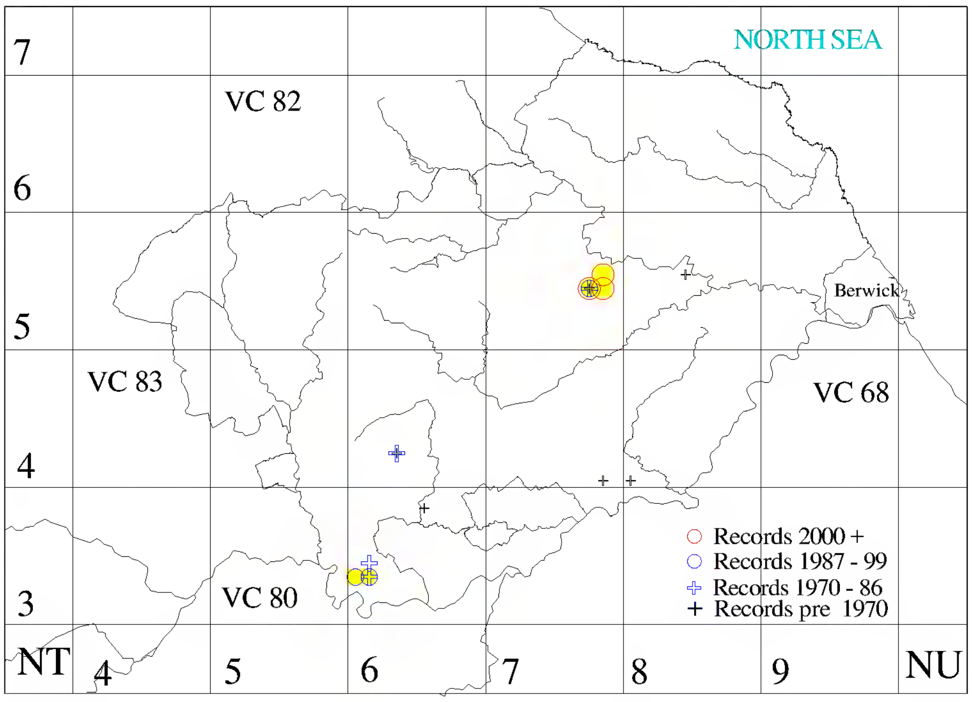
Ranunculus fluitans is local in England and scarce in Scotland. It is a characteristic species of the aquatic flora of the River Tweed and its tributaries, though much less abundant then *R. pencillatus* Stream Water-crowfoot. The Berwickshire *R. fluitans* may be a hybrid clone rather than the pure species as it forms few fruits. It may grow with *R. x kelchoensis*, the hybrid with *R. peltatus* Pond Water-crowfoot, with which it is easily confused when the hybrid has not formed its characteristic laminar leaves. These laminar and intermediate leaves tend to be formed late in the season or during a period of low water levels.

The apparent decline is nevertheless thought to be all too real. The losses may relate in part to increased eutrophication but many are attributed to excessive weed control by fishing interests. This species forms particularly long stems in running water at the head of pools and there is much less re-growth after cutting than from stands of *R. pencillatus*, so it is more vulnerable.

Ranunculus lingua Greater Spearwort

Aquatic, native, rare or scarce

Berwickshire 1987-2013	1+1 sites	0.9% tetrads	9% hectads
Britain 1987-1999		3% tetrads	21% hectads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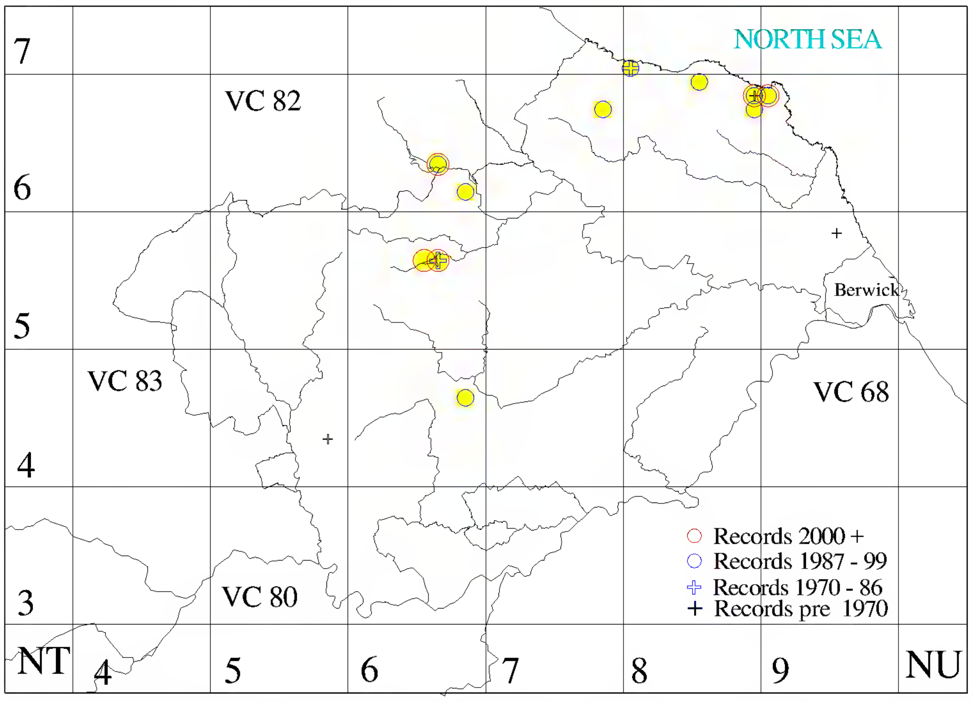
Ranunculus lingua is local in Britain as a native of base-rich fens and pool-edges, but is now widely introduced as an ornamental.

The best Berwickshire population is in a floating mat of vegetation along the Hen Poo at Duns Castle 75 where it is thought to be an introduction, but it has also been found as a native at Bemersyde Moss 63.

Ranunculus peltatus Pond Water-crowfoot

Aquatic, native, rare or scarce

Berwickshire 1987-2013	7½ sites	3% tetrads	30% hectads
Britain 1987-1999		3% tetrads	20% hectads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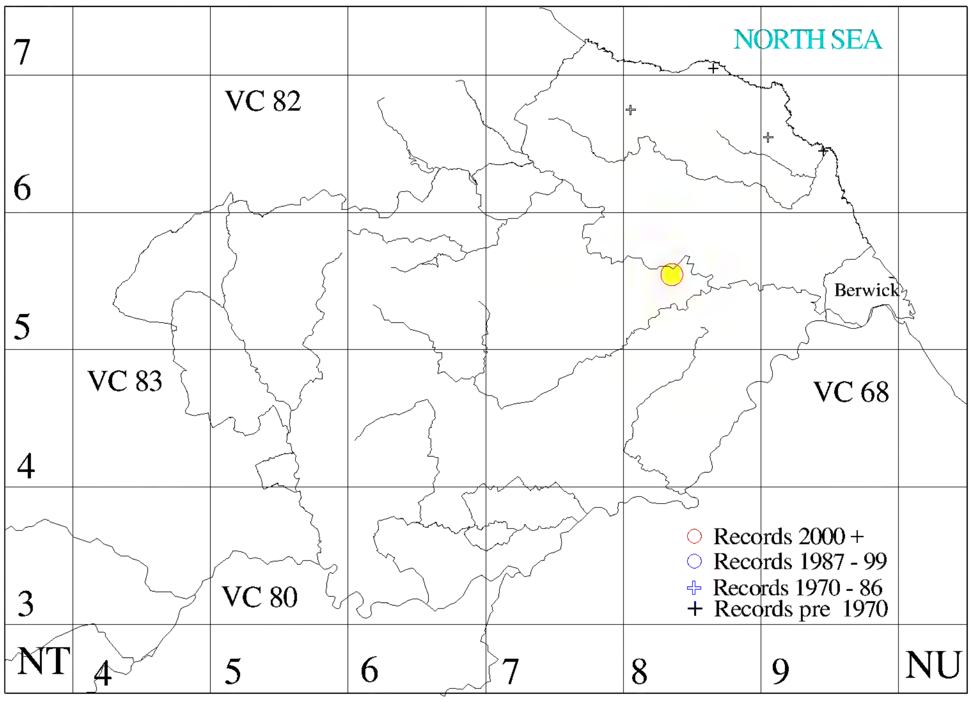
Ranunculus peltatus is widespread but somewhat local in Britain, colonising shallow water in still or slow-moving water-bodies.

It is limited in Berwickshire to the few water-bodies that do not have dense riparian vegetation, often because of a fluctuating water-level. Much the largest population is round the Watch Water Reservoir 65 where it favours the mouths of small burns. It is also in an oxbow by the Whiteadder 66 not far below the Whiteadder Reservoir (the reservoir itself is in East Lothian), in a seasonal pond near Westerside 86 and in the small reservoir at Millar's Moss 86. It may have gone from Coldingham Loch 86 as the pool where it grew has been overwhelmed by the spread of *Phragmites* Reed.

Ranunculus sardous Hairy Buttercup

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		3% tetrads	11% hectads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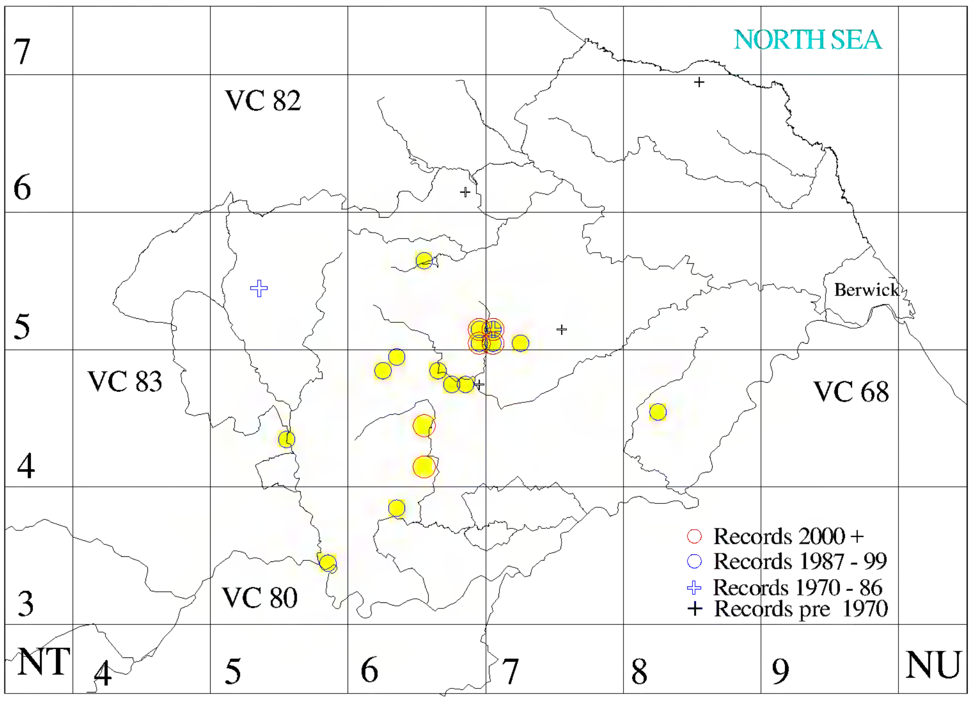
Ranunculus sardous is an annual of damp coastal pasture in southern Britain.

There are few Berwickshire records and it was thought to be extinct until several plants were found as arable weeds in a turnip field near Edrom 85 in 2004 with other scarce weeds such as *Aethusa cynapium* Fool's Parsley which had been known there since 1986. Its status in Berwickshire is questionable.

Ranunculus trichophyllus Thread-leaved Water-crowfoot

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		6% tetrads	22% hectads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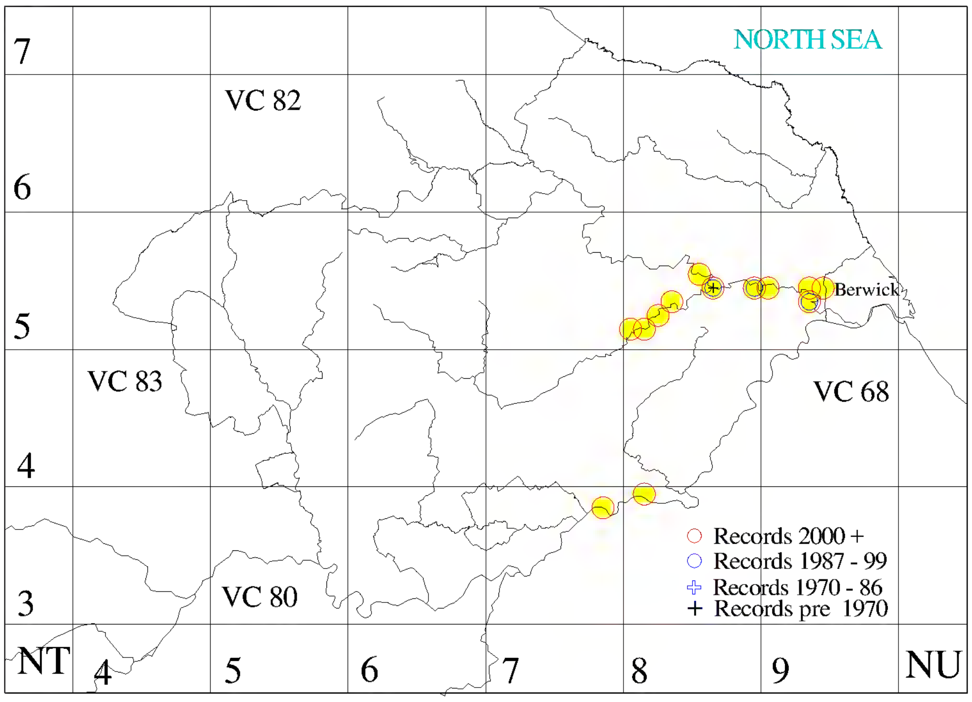
Ranunculus trichophyllus is local in England and scarce in Scotland. It grows in slow-moving water and its principal colonies in Berwickshire are in the Fangrist Burn 64 and its tributary burns, again emphasising the interest of this area. It also grows in the Hareford Burn below Gordon Moss 64.

The recording history is rather incomplete, so little can be deduced about long-term trends or recent colonisation.

Ranunculus x kelchoensis = *R. fluitans x peltatus* Kelso Water-crowfoot

Aquatic, native, rare or scarce, British rare

Berwickshire 1987-2013	10 sites	3% tetrads	17% hectads
Britain 1987-1999		0.04% tetrads	0.3% hectads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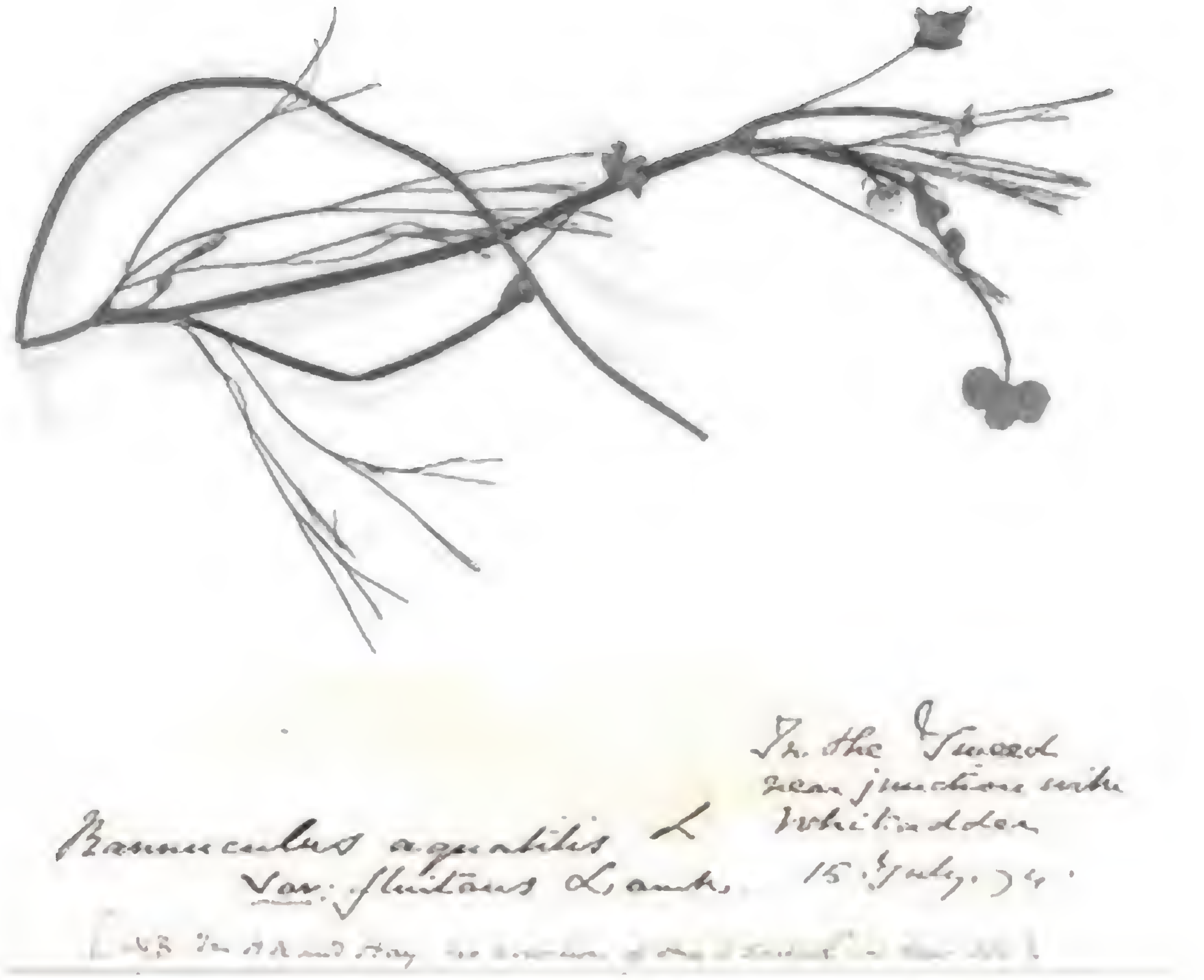
Ranunculus x kelchoensis is a rarity known in just a few British rivers. It is named after the town of Kelso where it was discovered by Andrew Brotherston in the rivers Teviot and Tweed. It was first collected in the Whiteadder in 1841.

It is quite frequent in the Blackadder and Whiteadder, sometimes with the rather similar hybrid known as *R. circinatus x fluitans*. It has larger flowers than that taxon with petals 10-11mm long. The plants are usually fully double-flowered with 10 petals and are very robust. Some variablility has been observed, suggesting that more than one clone is present. Well developed plants have some laminar and intermediate leaves as well as capillary leaves, but only capillary leaves are present early in the season and the development of laminar and intermediate leaves may be delayed by persistent high water levels. Sites include Fireburnmill 83 on the Tweed, Kimmerghame 85, Mouth Bridge 85, Kelloe Bridge 85 and Allanton Bridge 85 on the Blackadder and Edrington Castle 95 on the Whiteadder.


In the Tweed
near junction with
Whiteadder
Ranunculus aquatilis L
Var: fluitans L. auct.
15 July. 74.
[N.B. In HA and Hay no mention of the 2 sorts of L in this Sp]

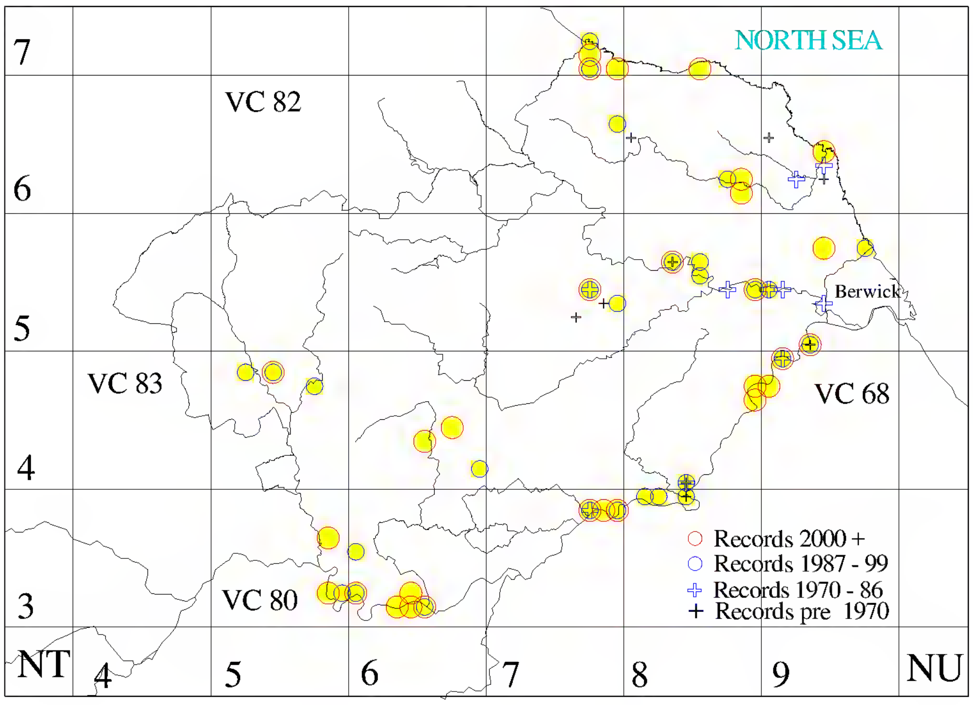
F M Norman's 1874 specimen of *Ranunculus x kelchoensis*

Text at foot reads [N.B. in HA & Hay (Hooker, Arnott & Hay) no mention of the 2 sorts of L in this Sp]

Reseda luteola Weld

Grassland, archaeophyte

Berwickshire 1987-2013	4% monads	12% tetrads	70% hectads
Britain 1987-1999		53% tetrads	29% hectads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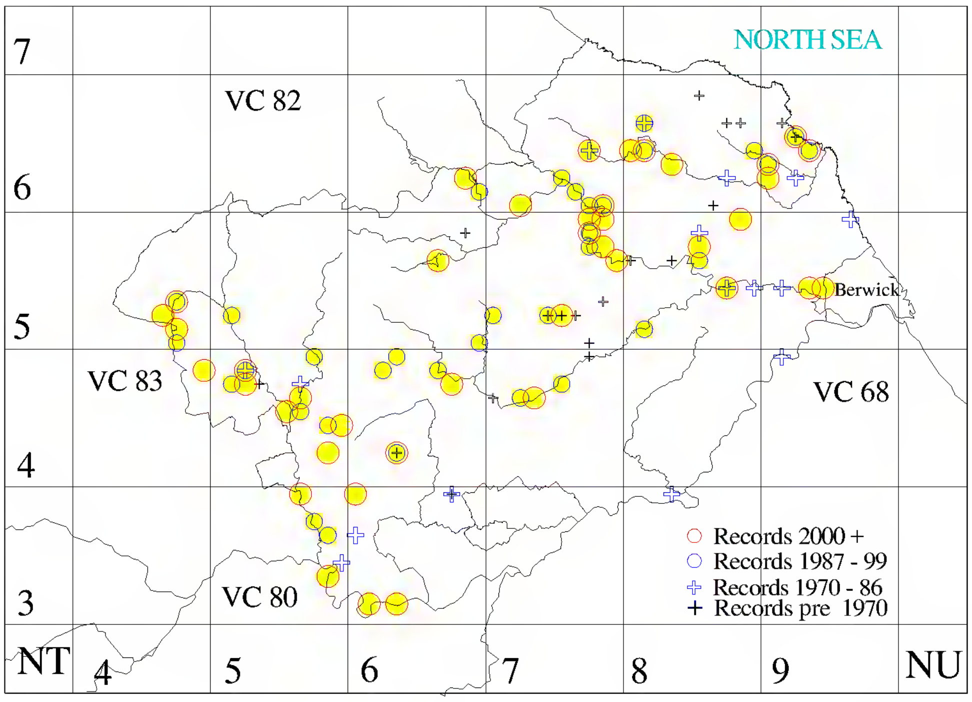
Reseda luteola is found in dry grassland and ruderal habitats over much of England and parts of lowland Scotland.

In Berwickshire it may have spread from old introductions for use in making a yellow dye. Many of the colonies are on dry banks overlooking the River Tweed, where it is quite plentiful. Elsewhere it is usually found in ruderal situations around towns and villages.

Rhinanthus minor Yellow-rattle

Grassland, native, other axiophyte

Berwickshire 1987-2013	5% monads	15% tetrads	70% hectads
Britain 1987-1999		44% tetrads	80% hectads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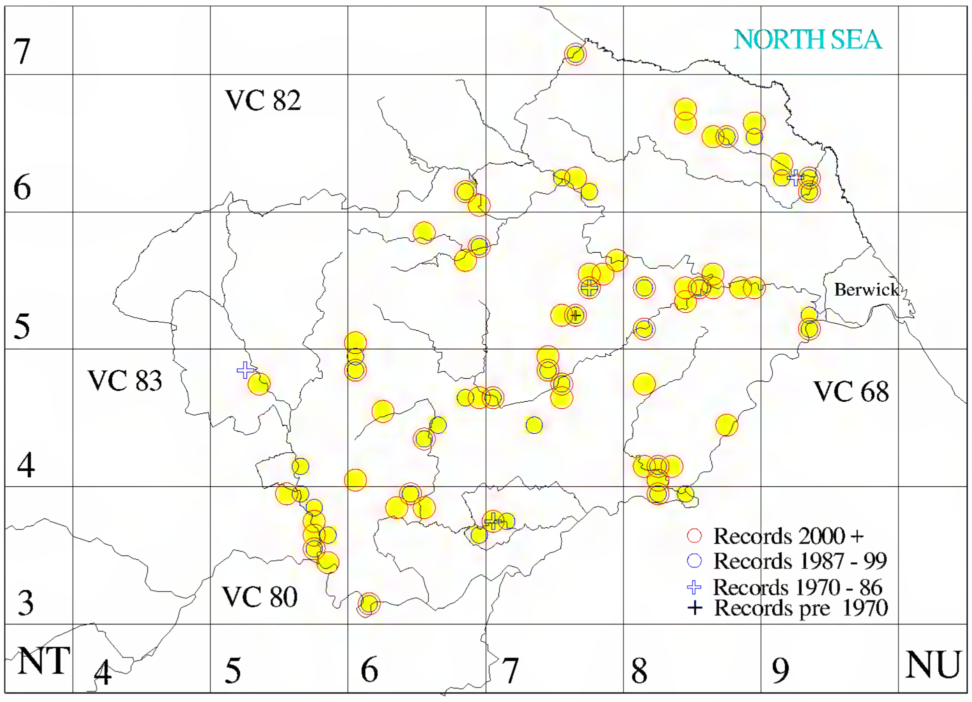
Rhinanthus minor is very widespread in Britain but less so in Berwickshire. Many of the colonies are very small, being found in scraps of grassland at the riverside, along tracks and forestry rides and on the sides of ditches. Occasionally it is still plentiful. It is almost absent from the arable land of the Merse.

As a root parasite of grasses, *R. minor* is valued from a wildflower conservation viewpoint as it weakens the grasses, encouraging the formation of habitat gaps where a variety of herbs can colonise. Recently it has been sown quite widely for this purpose. Four of the recent records are attributed to sowings, but other sowings may not have been recognised as such. This is probably quite a mobile species, colonising along rivers and other waterways especially where there has been some disturbance and also being transported by vehicles and animals along tracks and rides. Nevertheless a long-term decline has probably continued in recent years.

Rhododendron ponticum Rhododendron

Woodland, neophyte, intrusive neophyte

Berwickshire 1987-2013	6% monads	16% tetrads	74% hectads
Britain 1987-1999		30% tetrads	63% hectads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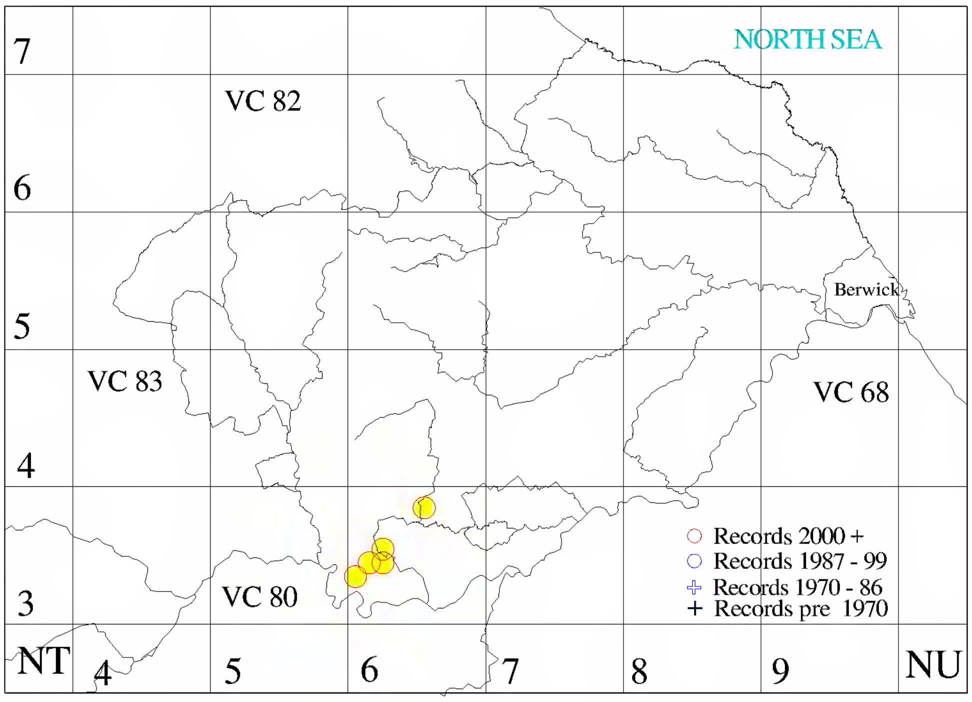
Rhododendron ponticum is very widespread in Britain and is invasive in some areas, particularly the west coast of Scotland where it favours peaty soils. In Berwickshire it is almost ubiquitous in the gardens and policy woodlands of the larger houses. It has been much used as grafting stock for more exotic species and some populations derive from such plants where the grafted species have died out. In general the Berwickshire populations do not spread much and are only one of many negative influences on the native ground flora of the managed woodlands in which it grows. Recently, however, plantings at the caravan park adjacent to Drone Moss 86 have seeded abundantly into the moss and threaten to overrun it completely. Meanwhile exotic Rhododendrons have been planted in woodland adjacent to Long Moss, Coldingham Common 86, and *R. ponticum* may be present as grafting stock suggesting a high risk of invasion to the peatland on the moss.

Rorippa islandica Northern Yellow-cress

Wetland, native, rare or scarce, British scarce

Berwickshire 1987-2013	2 sites	1% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	1% hectads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Rorippa islandica grows on seasonally inundated mud. It is a recently recognised taxon now known from scattered disjunct British localities.

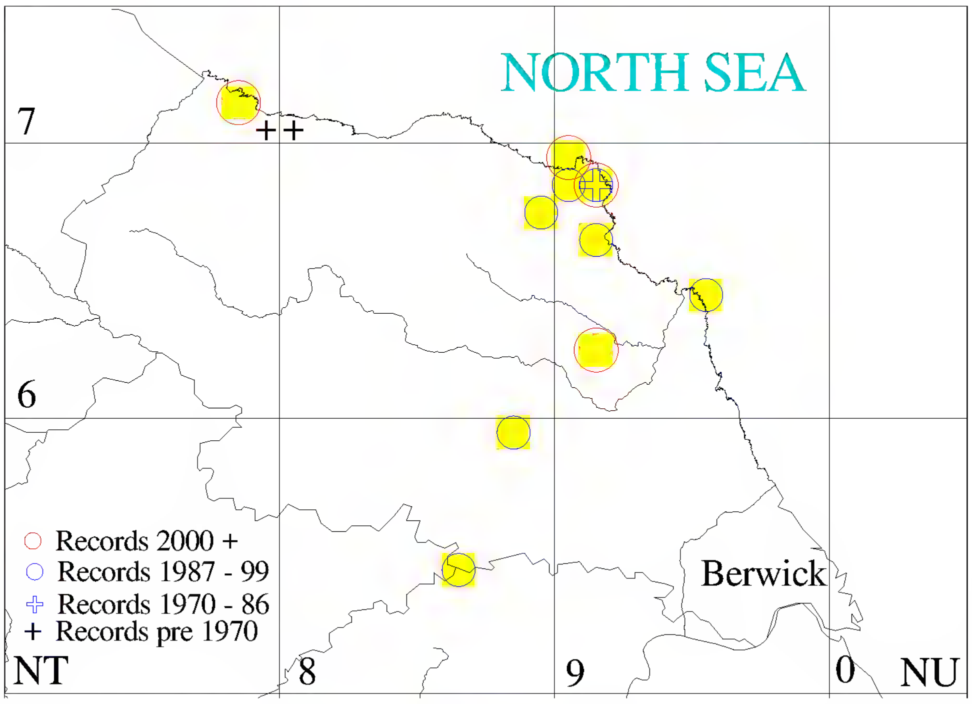
Although first found in Berwickshire in 2001 the main colonies were not found until 2003. The few plants by the lake at Mellerstain 63 have not persisted but it still believed present on a muddy patch by Bemersyde Moss 63 and in several places around the nearby Whitrig Bog 63.

It could be a recent colonist in Berwickshire, but this is little more than speculation in view of the taxonomic history of the species (the taxon formerly known in Britain as *R. islandica* is the widespread *R. palustris* Marsh Yellow-cress).

Rorippa nasturtium-aquaticum (Nasturtium officinale) Water-cress

Aquatic, native, rare or scarce

Berwickshire 1987-2013	10 sites	2% tetrads	17% hectads
Britain 1987-1999		31% tetrads	45% hectads



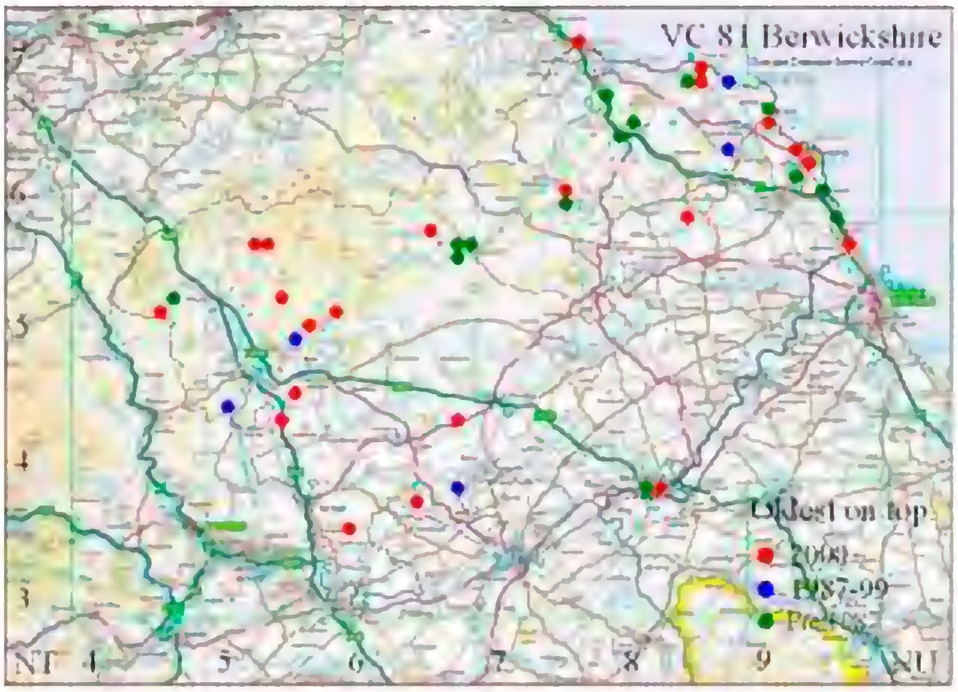
The two Water-cresses *Rorippa nasturtium-aquaticum* and *R. microphylla* have mildly contrasting distributions with *R. nasturtium-aquaticum* the more widespread in England but with *R. microphylla* much more widespread in eastern Scotland. Both species grow in ponds and ditches and along burns.

R. nasturtium-aquaticum is largely coastal in Berwickshire. Historically it was not separated from *R. microphylla*, so there are no records before 1960, but it is now known to be much less frequent than *R. microphylla*. Sites for *R. nasturtium-aquaticum* include Cove Harbour 77, St Abbs Head 96, Coldingham Bay 96, Gunsgreen 96 and the confluence of the Blackadder and Whiteadder 85.

Rosa pimpinellifolia (R. spinosissima) Burnet Rose

Rock, native, selected axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	61% hectads
Britain 1987-1999		6% tetrads	23% hectads



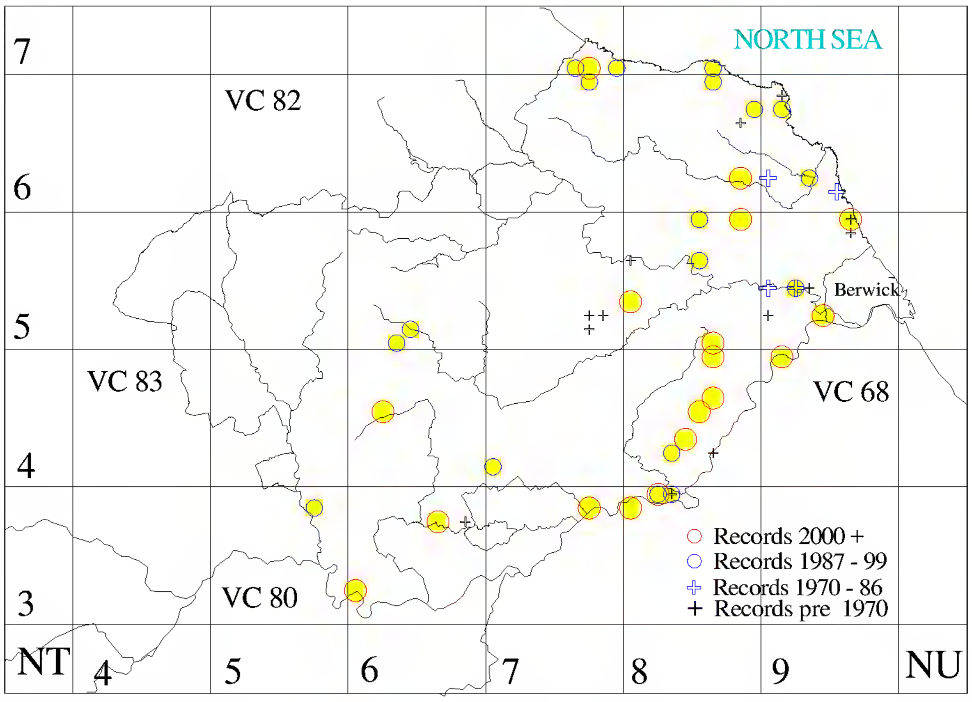
Rosa pimpinellifolia is found quite widely round the coast of Britain on sand dunes and sea cliffs but is rather scarce inland. The situation in the Scottish Borders is unusual. There are no native coastal populations, reflecting the near-absence of sand dunes but this rose is a feature of many a small cliff up the hill burns of the Lammermuirs towards the west of the county. It is also found near the coast in Lumsdaine Dean 86, Westerside Dean 86 and Dowlaw Dean 87. Hybrids are rare, but they do occur near some of the colonies in deans where other roses are present. The lowland records all relate to introductions.

There is no evidence of change in the native populations but this species is being increasingly introduced. This trend is obscured in the map by the recent discovery of a number of additional native colonies in the hills. Many of the introductions are of robust cultivars. It is especially popular near the coast but it is now sometimes included in conservation plantings in the hills where the genetic integrity of the native population is being put at risk.

Rosa rubiginosa Sweet-briar

Woodland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	70% hectads
Britain 1987-1999		2% tetrads	9% hectads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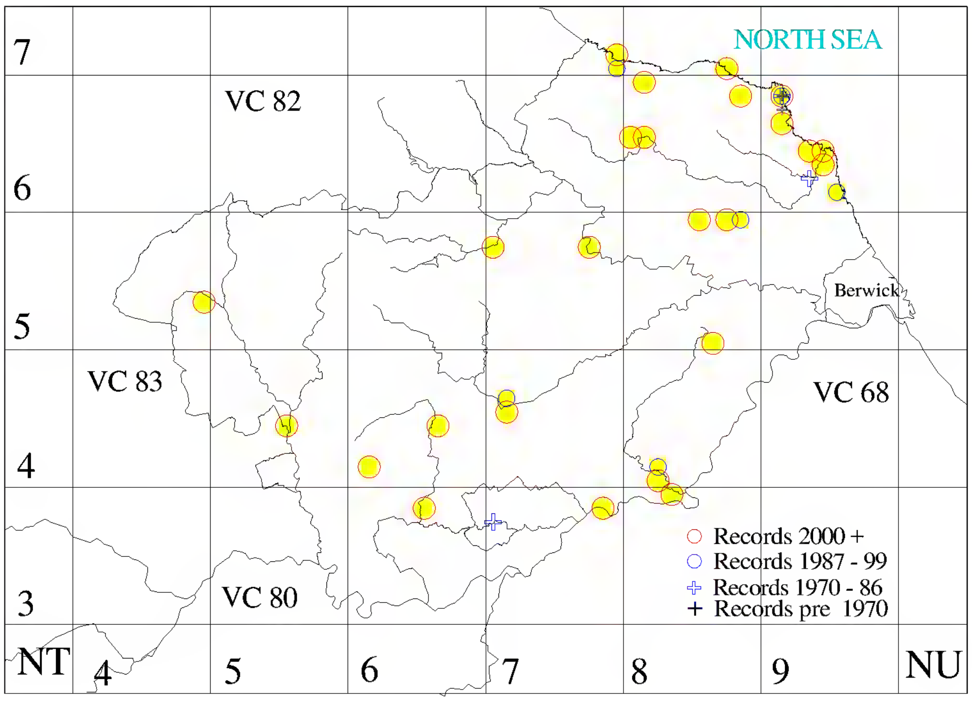
Rosa rubiginosa is a local plant in Britain, most characteristic of the chalk and limestone of southern England, though there is also a band of records along the east coast of northern England and southern Scotland, including Berwickshire, which suggests that the species is native there. Analysis of the Berwickshire records only marginally supports this. This rose does occur in natural scrub on the few limestone outcrops, as on a cliff opposite Carham 83 on the River Tweed and at Hilton Bay 95 on the coast. There are a cluster of records in various habitats elsewhere in the Merse and near the coast, but a considerable proportion of these are more or less obvious plantings near houses or in recently planted hedges. Further west, the few records are all thought to relate to introductions.

As a Berwickshire native, this species appears to be in decline, but as an introduction it is clearly increasing.

Rosa rugosa Japanese Rose

Coast, neophyte, intrusive neophyte

Berwickshire 1987-2013	2% monads	7% tetrads	61% hectads
Britain 1987-1999		11% tetrads	26% hectads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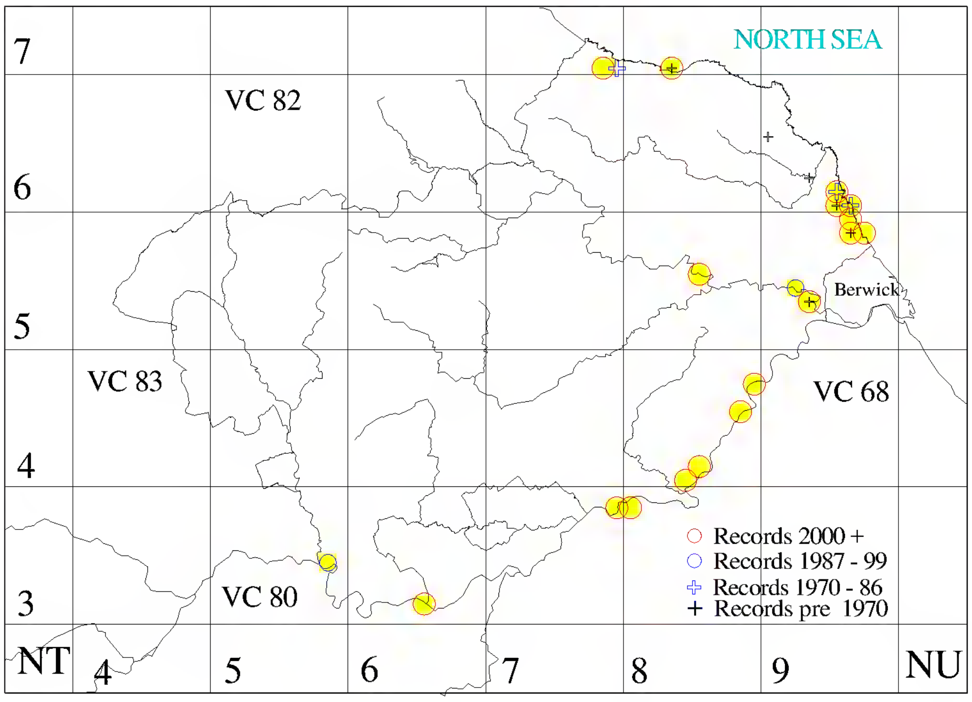
Rosa rugosa is currently in fashion as a hedging plant throughout Britain, though it suckers strongly. It is particularly favoured on the coast as it is very hardy and salt-tolerant. In general its suckering is only a problem to the owner of the hedge but the shrub is now finding its way to the back of beaches on the coast, whether by seed or by fragments washed up by storms. Here, in the sand, it suckers very freely and could become a real pest.

Rubus caesius Dewberry

Woodland, native, rare or scarce

Berwickshire 1987-2013	16 sites	4% tetrads	43% hectads
Britain 1987-1999		24% tetrads	37% hectads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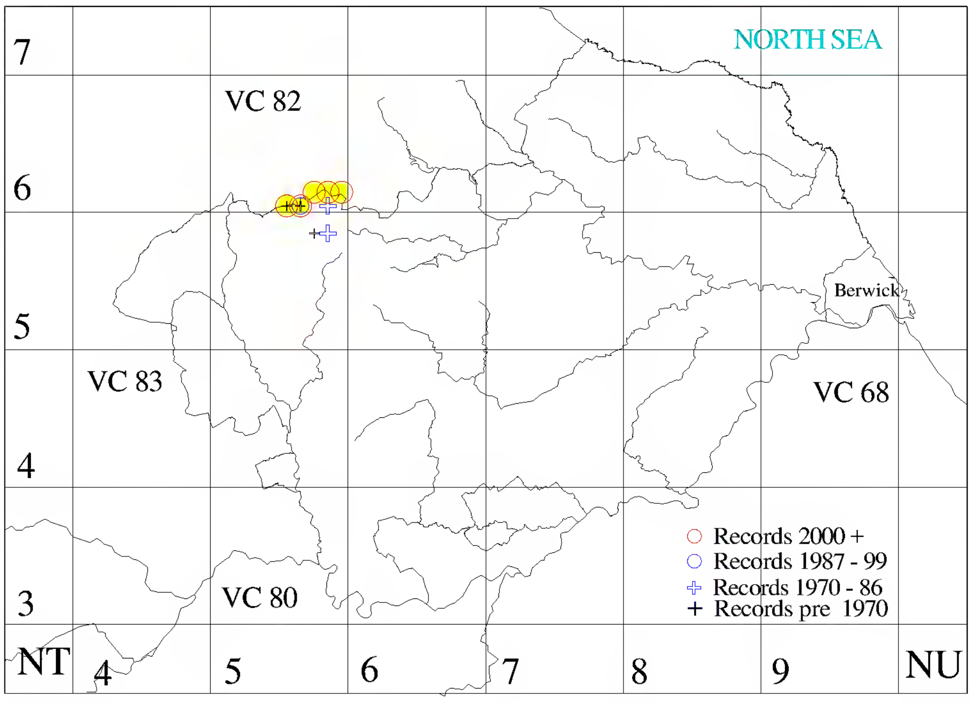
Rubus caesius is widespread in England but only just reaches Scotland. It grows in woodland and scrub, mainly on basic soils, and sometimes in fens.

All the Berwickshire records are from wet places on basic soils that are often under cliffs, both on the coast and by the River Tweed. It is plentiful in a number of places along the Lamberton Undercliff 95 and from there northward to Burnmouth 96. It is also found at Lansey Bank 87 and near Pease Bay 77. Along the Tweed it is found at Blount Bank 84, Coldstream 84, on the limestone opposite Carham 73, below Dalcove 63 and at Gledswood 53. There are colonies on the Whiteadder at Clarabad Wood 85 and below Edrington Castle 95.

Rubus chamaemorus Cloudberry

Moorland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.9% tetrads	4% hectads
Britain 1987-1999		5% tetrads	10% hectads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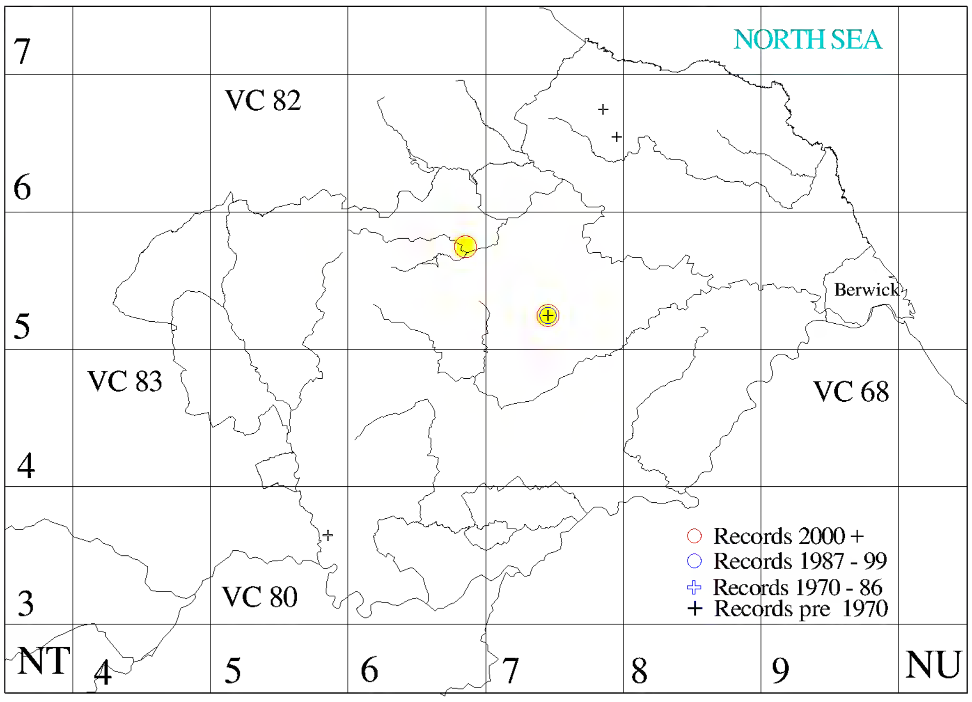
Rubus chamaemorus is a species of montane blanket bog that is widespread in upland Britain, but absent from much of the west coast.

The blanket bog of the Berwickshire part of the Lammermuirs is much degraded, mainly as a result of muirburn, and active bog is reduced to highly localised patches. *R. chamaemorus* survives in three main colonies not far from each other with presence in a total of eighteen 100x100m grid cells, at Rotten Cleugh 56, on two sections of the slopes of Meikle Says Law 56, mostly on deep but rather degraded blanket bog, with some outliers including Little Says Law 56. Some of these outliers may be lost but there is a degree of uncertainty about the exact localities of some of the older records.

Rubus saxatilis Stone Bramble

Woodland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		6% tetrads	18% hectads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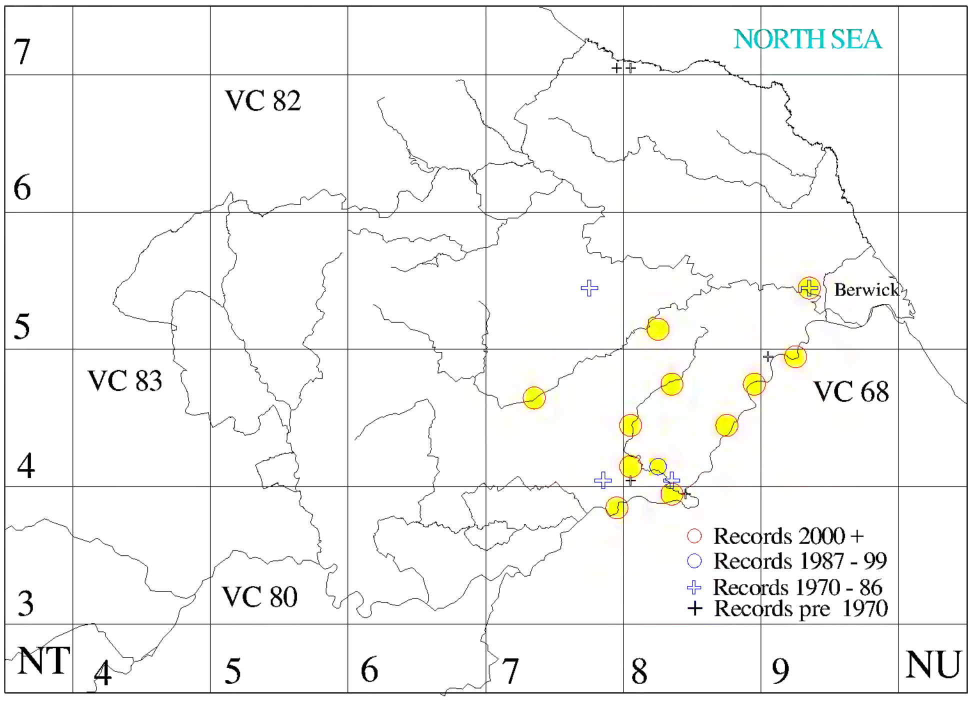
Rubus saxatilis is quite widespread in the uplands of northern England and Scotland where its main habitat is wooded cleughs.

The absence of suitable cleughs in the Lammermuirs has meant that this species has always been poorly represented in Berwickshire. It just survives in two places, at Langtonlees Cleugh 75 and at Heron's Hole near Rathburne on the Dye Water 65, where it grows on wet cliff ledges.

Rumex conglomeratus Clustered Dock

Riverside, native, rare or scarce

Berwickshire 1987-2013	11½ sites	3% tetrads	30% hectads
Britain 1987-1999		38% tetrads	55% hectads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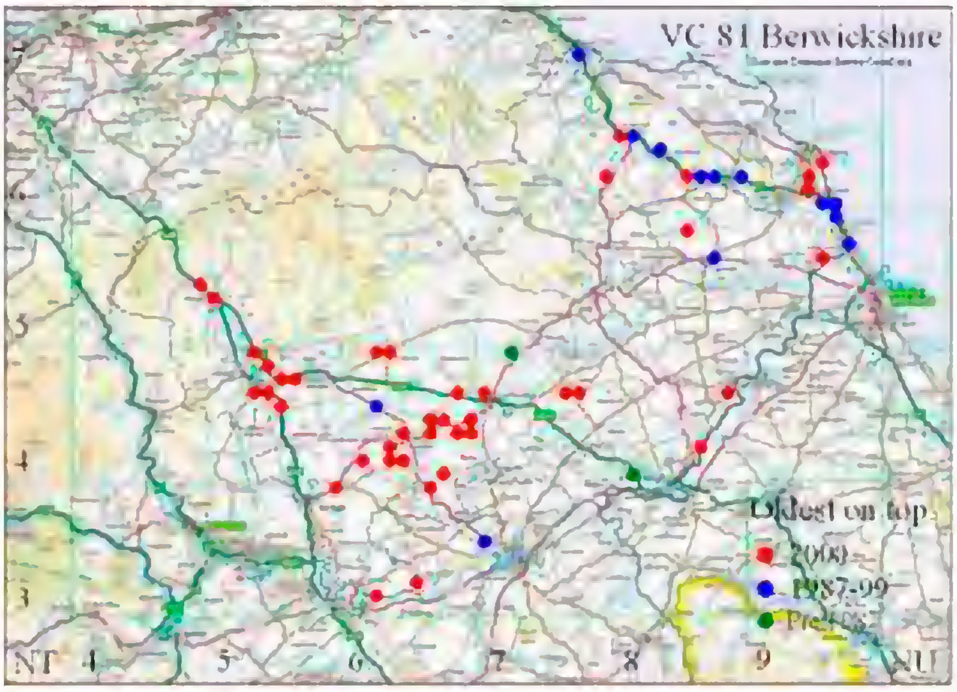
Rumex conglomeratus is a plant of wet meadows and muddy riversides that is very widespread in lowland England but mainly restricted to the central belt in Scotland.

It is extraordinarily scarce in Berwickshire where the almost complete absence of cattle plodging at the edge of water courses in the lowlands may have removed a key habitat for this species. Just a very few plants have been found at most of its sites. Middlestots Pond 85 and the Tweed below Blount Bank 84 are perhaps the best sites and a few plants sometimes appear by the Leet Water at The Hirsel 84 where cattle have had access to the river, at least until very recently. It also occurs further up the Leet Water, as at Wylie Cleugh 84.

Rumex longifolius Northern Dock

Ruderal, neophyte, prominent neophyte

Berwickshire 1987-2013	5% monads	13% tetrads	65% hectads
Britain 1987-1999		15% tetrads	9% hectads



Rumex longifolius is a widespread native plant of roadsides and fields in eastern Scotland and, more locally, in the upland parts of northern England.

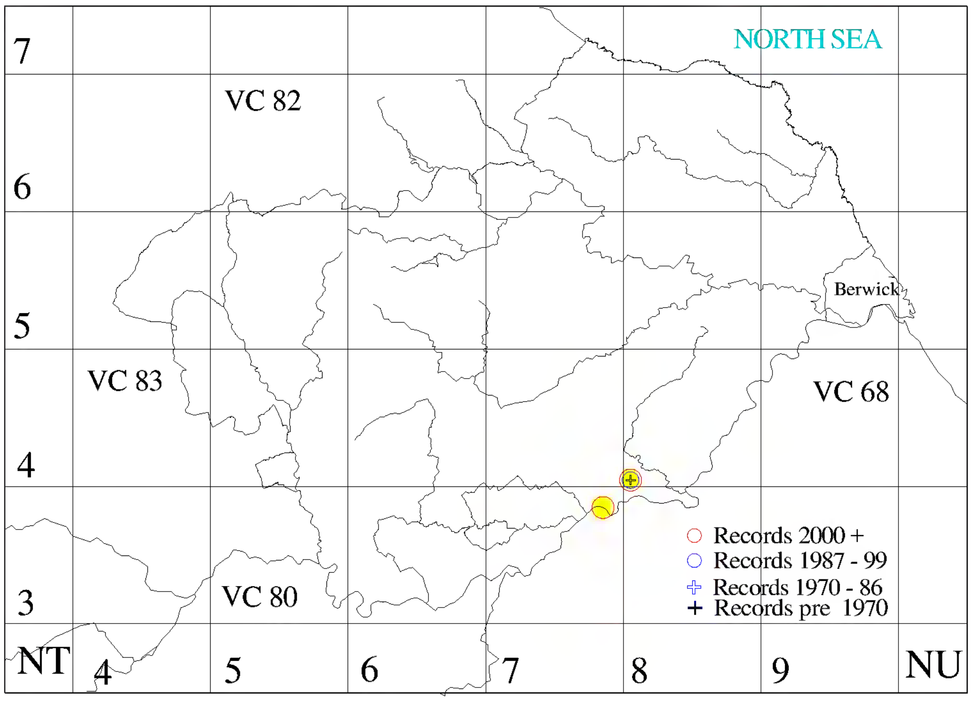
It can hardly be classed as a native in Berwickshire as the only record before 1987 is one from Greenlaw Moor 74 in 1970. In the late 1990's and early 2000's it spread dramatically down the main roads from Edinburgh, the A1 in the east and the A68 and A6089 in the west but dispersing only modestly elsewhere. It occupied a habitat somewhat back from the tarmac, unlike the roadside halophytes. More recently it has declined almost as dramatically as it arrived. The exception is the area around Gordon 64 where it has colonised disturbed peaty ground in fields around the former great wetland centred on Gordon Moss. The causes of these changes are a mystery. While it is true that it forms hybrids with *R. crispus* Curled Dock (4 monads) and *R. obtusifolius* Broad-leaved Dock (4 monads), there is no evidence that *R. longifolius* is 'being hybridised out of existence'.

***Rumex longifolius* by River Tweed near former Peel Hospital Selkirkshire 1998**

Rumex maritimus Golden Dock

Wetland, native, rare or scarce

Berwickshire 1987-2013	1½ sites	0.6% tetrads	9% hectads
Britain 1987-1999		1% tetrads	8% hectads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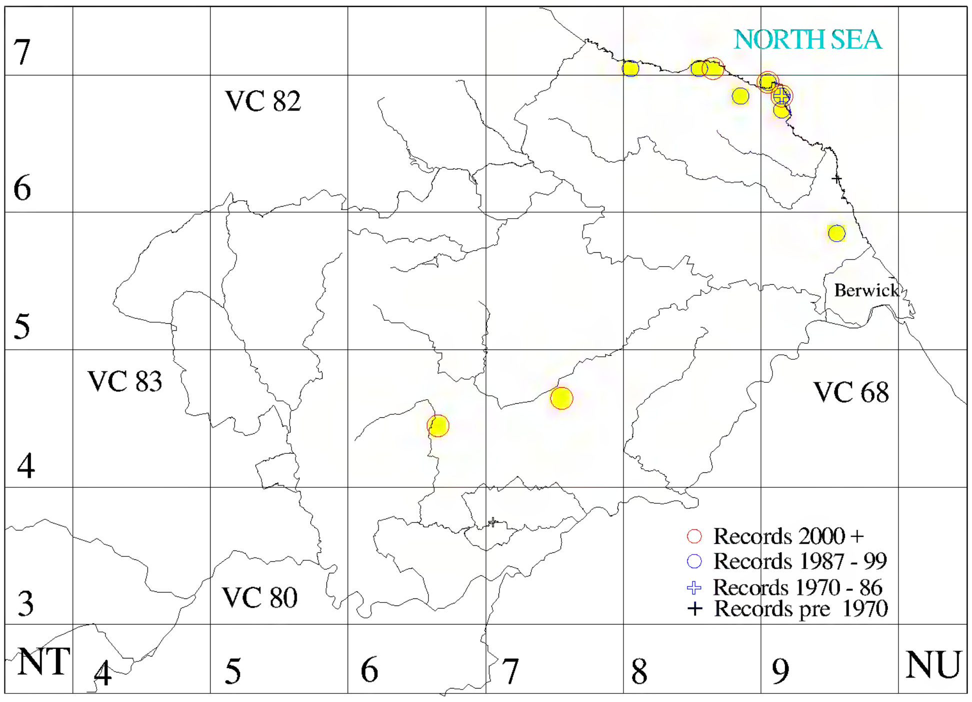
Rumex maritimus is a local plant of pond margins and wet hollows in the English Midlands, where it is increasing as it is favoured by eutrophication.

The Berwickshire site at Lithtillum Loch 84 is believed to hold the only extant native Scottish population. There is now just a modest pond in the wetland at the site of the former loch where *R. maritimus* has fluctuated in recent years in response to a cycle of bank management. It was quite plentiful there in 1993 but only two plants were seen in 2004 and it could not be refound in 2009. Several plants were found as casuals on a farm tip near Springhill 73 in 2008 and were still there in 2012.

Sagina apetala subsp. apetala (S. apetala) Fringed Pearlwort

Coast, native, rare or scarce

Berwickshire 1987-2013	7½ sites	2% tetrads	26% hectads
Britain 1987-1999		8% tetrads	29% hectads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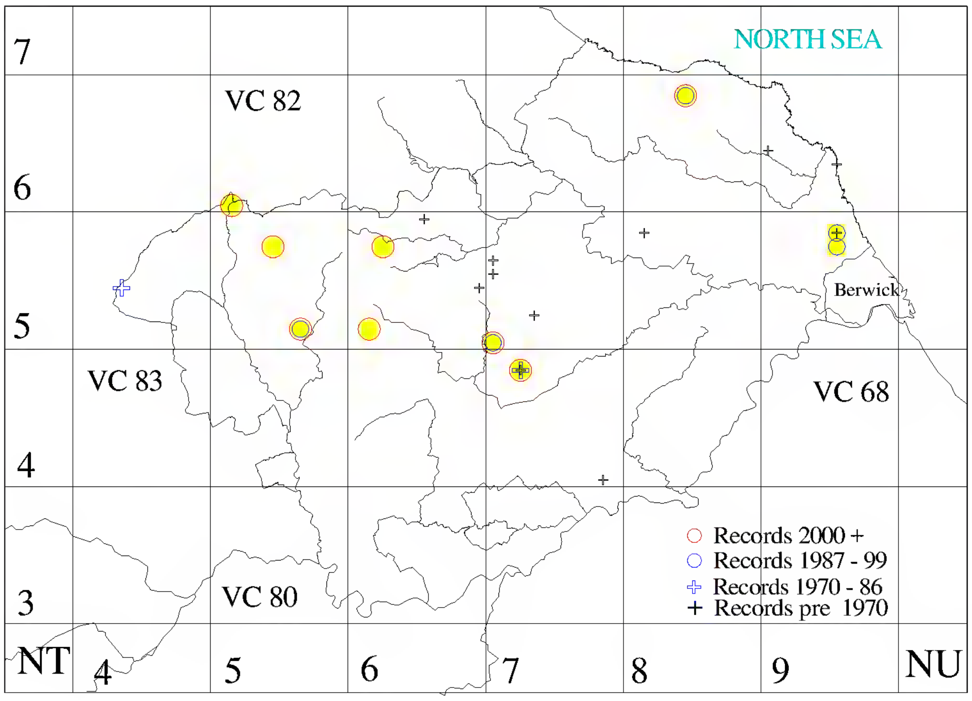
Sagina apetala subsp. apetala is more southern in its distribution than *subsp. erecta* and somewhat eastern and coastal in Scotland. It is less often found in ruderal habitats than *subsp. erecta* and more typical of sandy grassland and heath.

Most of the Berwickshire localities are coastal, as in fields near Dowlaw Dean 87, on ant hills of *Lasius flavus* Yellow Ant at St Abbs Head 96 and at Lamberton Moor 95. It also grows on the old runways at Charterhall Airfield 74.

Sagina nodosa Knotted Pearlwort

Wetland, native, rare or scarce

Berwickshire 1987-2013	8¼ sites	2% tetrads	30% hectads
Britain 1987-1999		6% tetrads	21% hectads



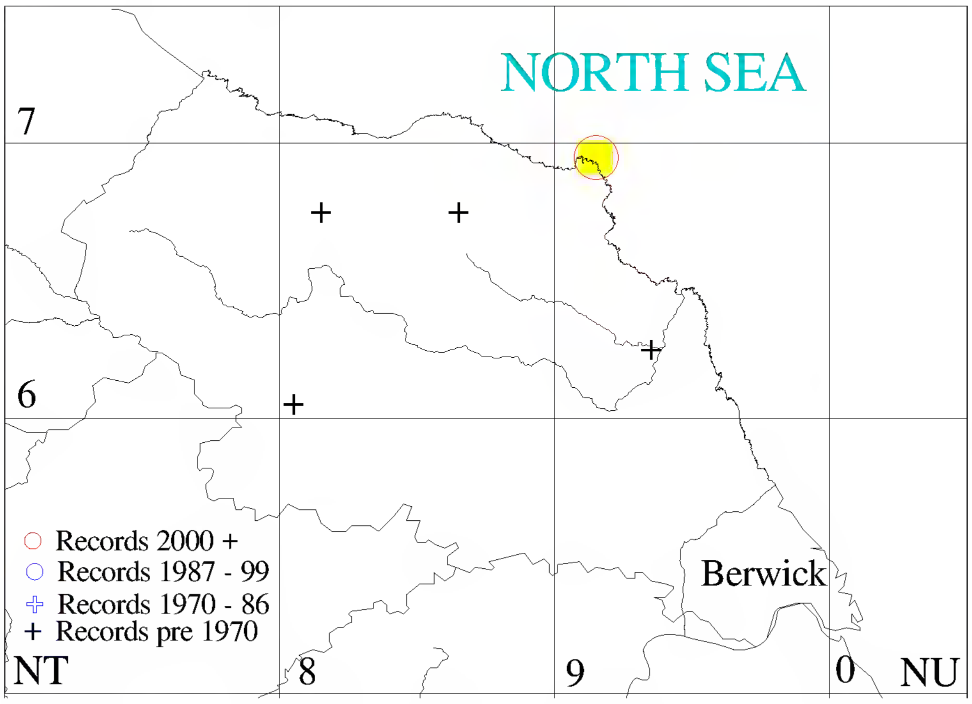
Sagina nodosa is a widespread but local species of open damp calcareous habitats that is particularly frequent in the Pennines.

It is apparently very scarce and declining in Berwickshire, but this is a late-flowering species that is most inconspicuous at the height of the recording season and may still be somewhat under-recorded in the base-rich flushes of the Lammermuirs. Sites, all flushes, include ones near a waterfall on the upper Whalplaw Burn near South Hart Law 55, by the Wheel Burn 55, by the Lammerlaw Burn 56, above Raecleugh 65, by the Hall Burn near Byrecleugh 65, Cleckinshaw by the Greenlaw Kaims 75, near Dowlaw Moss 86 and on Lamberton Moor 95. One of the strongest colonies is the one by the Hall Burn in an unpromising bryophyte flush.

Sagina subulata Heath Pearlwort

Moorland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		3% tetrads	14% hectads



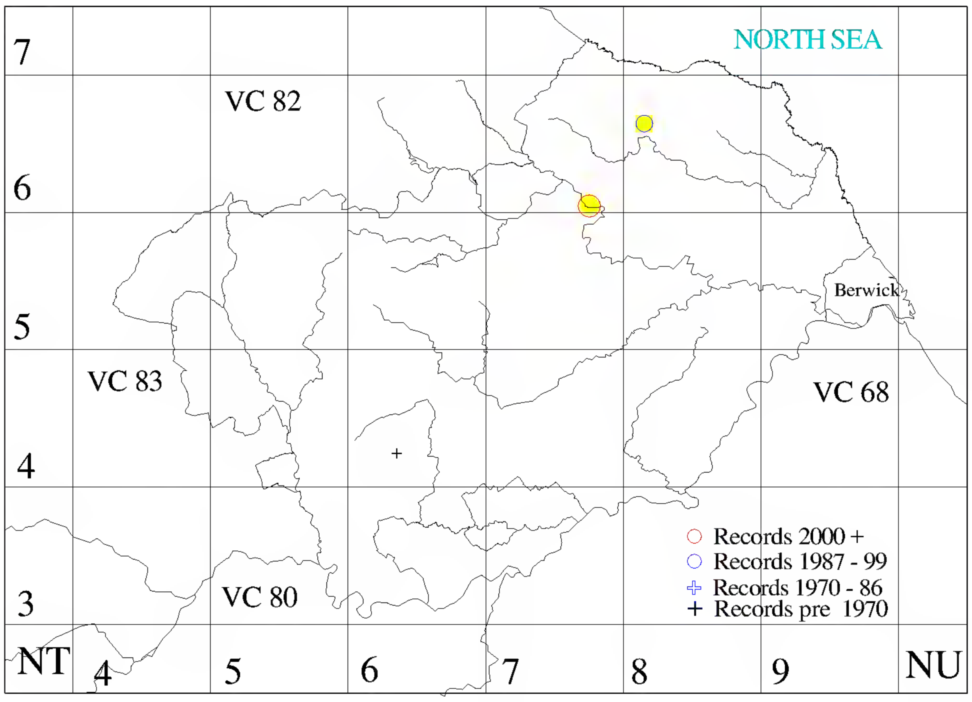
Sagina subulata is widespread along much of the western British seaboard, but local and northern in the east. It grows in open sandy or gravelly places, especially on the coast.

Long believed extinct in Berwickshire, it was discovered in 2002 at St Abbs Head 96, a site where it was not previously known by checking up on a doubtful record for *Minuartia verna* Spring Sandwort made by a summer ranger on the NNR, a little away from its known colonies. There *S. subulata* is found inland from the Lighthouse on a knowe to the south of the road with outliers nearby. While the presumption is that this is a native colony, long overlooked, there is a possibility that this species, like *S. maritima* Sea Pearlwort, has been brought in by cars or on walkers' boots and has colonised its natural habitat quite recently. 2002 counts were: knowes south of Lighthouse road 177 plants, passing place on Lighthouse road 15 plants and path near Lighthouse two plants.

Salix myrsinifolia Dark-leaved Willow

Riverside, native, rare or scarce

Berwickshire 1987-2013	2½ sites	0.6% tetrads	9% hectads
Britain 1987-1999		1% tetrads	5% hectads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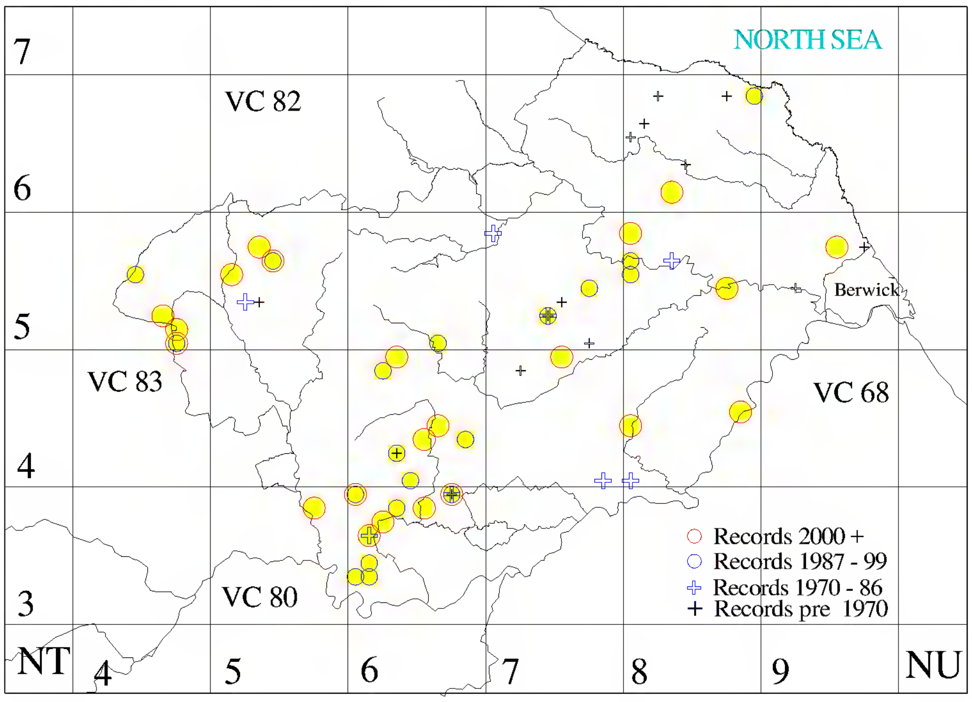
Salix myrsinifolia occurs locally in wet places along rocky burnsides at intermediate altitudes in northern England and Scotland.

There is one representative colony in Berwickshire, on rocky islets in the Whiteadder Water between Retreat Wood and Wild Wood 76 where it is found in five 100x100m grid cells but, within these, in only six 10x10m grid cells. The hybrid with *S. cinerea subsp. oleifolia* Rusty Sallow is also present. One bush was known by the Winding Burn 86 but could not be refound in 2011. There are historical records from Gordon Moss 64, but only the closely related *S. phylicifolia* Tea-leaved Willow is now known there.

Salix pentandra Bay Willow

Wetland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	52% hectads
Britain 1987-1999		6% tetrads	21% hectads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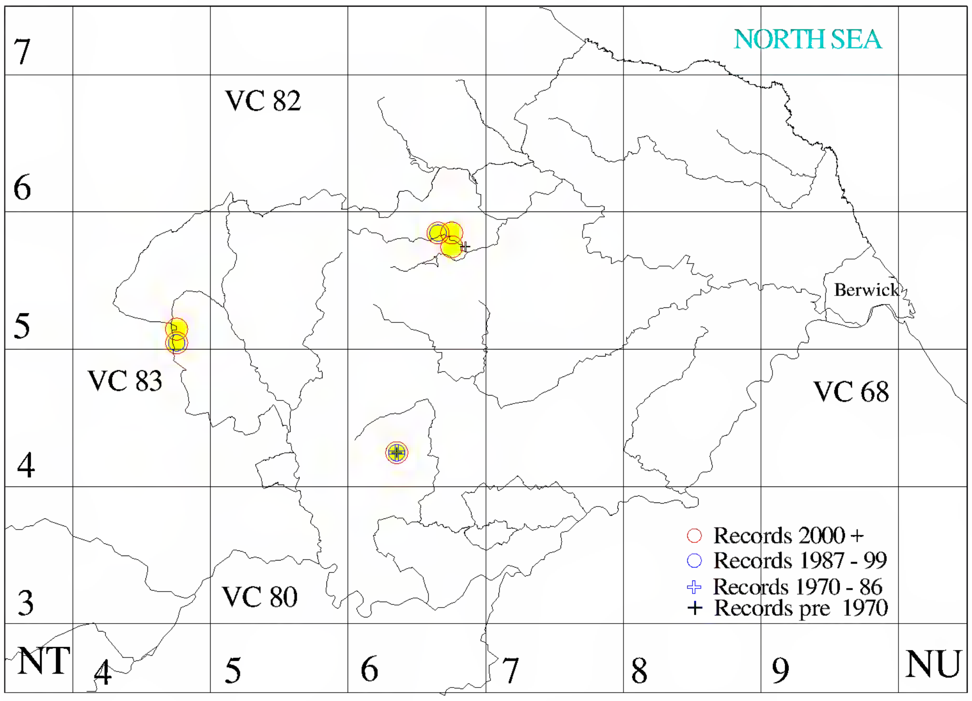
Salix pentandra is a handsome small tree whose native distribution is strongly focussed on northern England and southern Scotland. It is a fairly scarce native in Berwickshire, almost always in its typical habitat of somewhat calcareous fen or carr woodland, but it is more widespread as a planted introduction in a variety of habitats. It is sometimes difficult to assess status, particularly near rivers where it may be found in poor fragments of former wetland. The best native populations are at Longmuir Moss 45 and Lurgie Loch 63.

The population at Gordon Moss 64 has not been refound recently, but is likely to have been overlooked. Elsewhere the historical record is too confused by introductions for valid trends to emerge. It is still being planted, perhaps increasingly so, now usually under the conservation banner.

Salix phylicifolia Tea-leaved Willow

Wetland, native, rare or scarce

Berwickshire 1987-2013	4 sites	1% tetrads	13% hectads
Britain 1987-1999		2% tetrads	9% hectads



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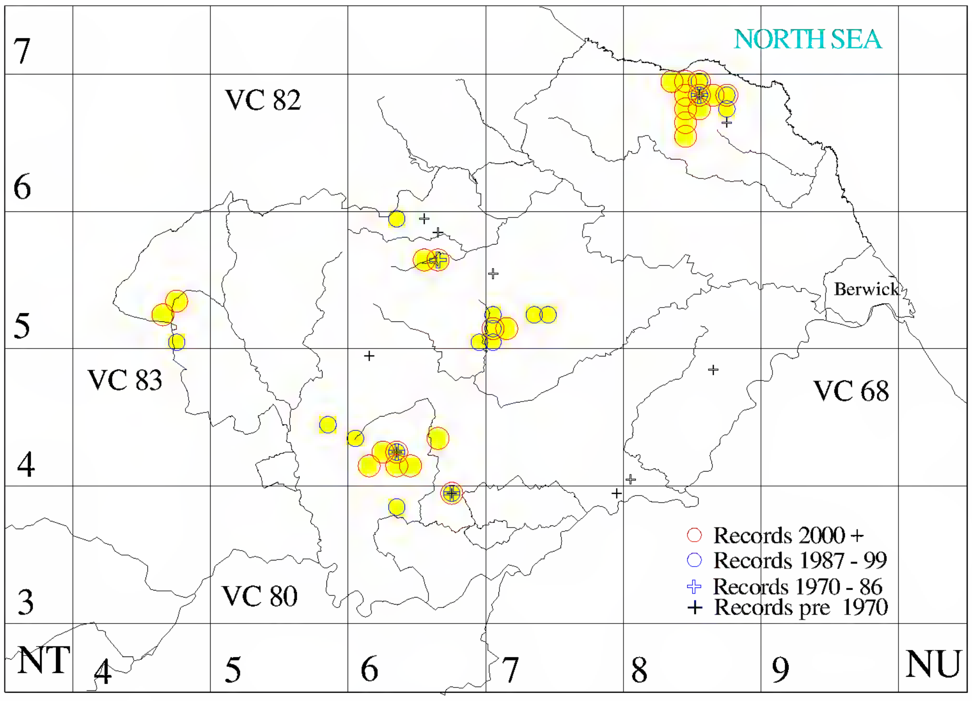
Salix phylicifolia is a shrub of upland burnsides on base-rich soils that is widespread in the uplands of northern England and Scotland, but avoids the coast.

It is very modestly represented in Berwickshire. There is a strong colony of large bushes on Longmuir Moss 45 in fen at the edge of a raised bog and an extended colony of small bushes in a very different habitat by the Dye Water near Horseupcleugh and Wrunklaw 65 where it grows in rocky places by the burn and on rocky islets. A few large bushes also survive at Gordon Moss 64 in wet birchwood on the former peat cuttings. *S. x laurina*, the hybrid with *S. cinerea* Rusty Willow occurs at Longmuir Moss and Gordon Moss.

Salix repens Creeping Willow

Moorland, native, selected axiophyte

Berwickshire 1987-2013	3% monads	7% tetrads	30% hectads
Britain 1987-1999		18% tetrads	40% hectads



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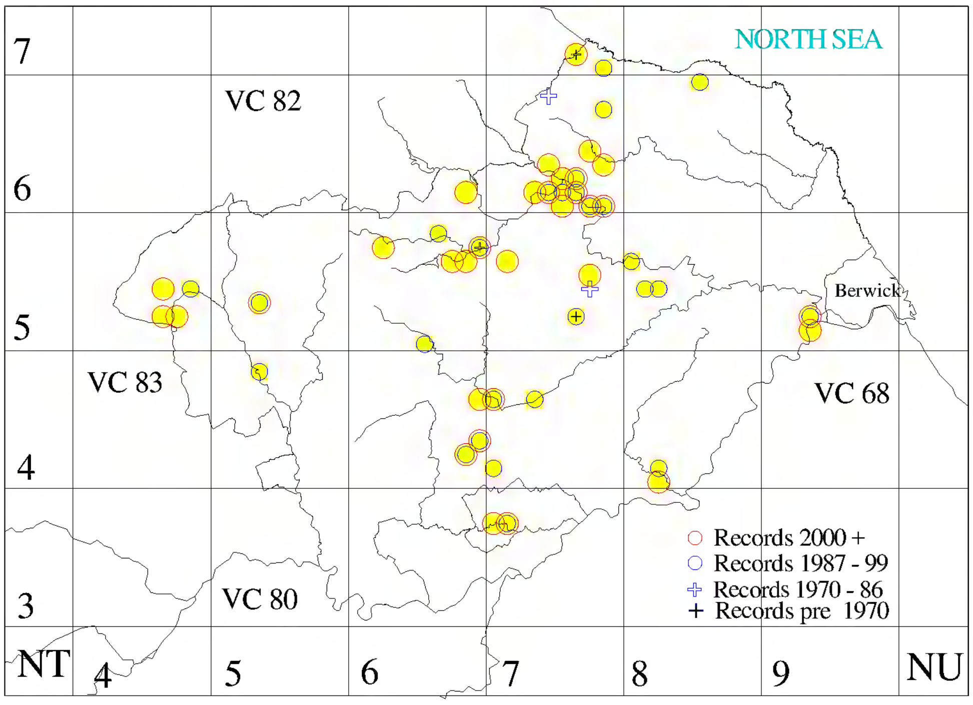
Salix repens has a widespread but patchy British distribution which is somewhat coastal in the west where sand dunes are often colonised. Inland it is found at the moorland-edge mostly in damp places where grasses and *Erica tetralix* Cross-leaved Heath may adjoin. It is a fairly scarce and localised plant in Berwickshire with a series of small colonies in the Coldingham Common area 86 and even smaller ones in the Gordon Moss area 64. The best colony is just east of the Greenlaw Kaimes at Polwarth Moss 75. There is a good colony by the Watch Water Reservoir 65 where it is protected from both grazing and muirburn. The distinctive upright variant, *var. fusca*, is found in a few places: Everett Moss 64, Gordon Common 64 (now a community woodland) and Drone Moss 86.

There is evidence of continuing decline which can mostly be attributed to the agricultural improvement of moorland-edge habitat, but muirburn may also have been a factor. The Watch Water Reservoir 65 was constructed in 1954 and the population there has probably colonised since then.

Sambucus racemosa Red-berried Elder

Woodland, neophyte, prominent neophyte

Berwickshire 1987-2013	4% monads	11% tetrads	65% hectads
Britain 1987-1999		9% tetrads	4% hectads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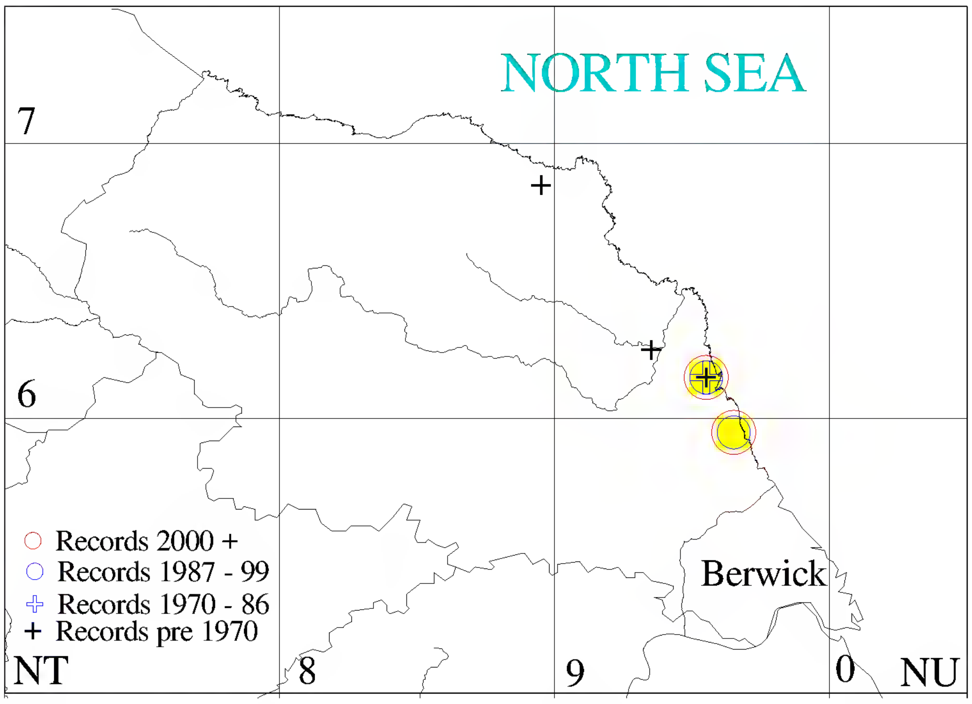
Sambucus racemosa is a shrub that has naturalised quite widely in eastern Scotland but is scarce elsewhere.

In Berwickshire it is often found in woodland in similar habitat to the very widespread *S. nigra* Elder but is also found in more open habitat at the moorland edge, sometimes where moorland has been afforested, as near Longformacus 65, and more rarely in juniper scrub, as by the Raughy Burn 45. There is a particular concentration of records around Abbey St Bathans 76 where it has become quite a feature of the woods.

Sanguisorba minor subsp. minor (Poterium sanguisorba subsp. sanguisorba) Salad Burnet

Grassland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		9% tetrads	33% hectads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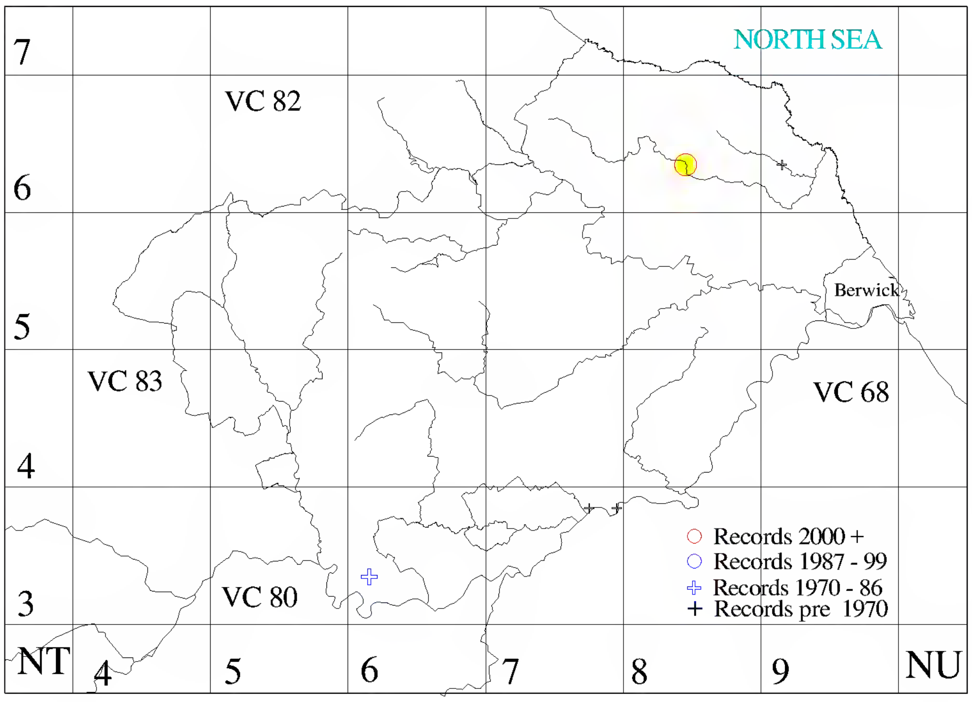
Sanguisorba minor subsp. minor is almost confined to England and Wales, where it is widespread in chalk and limestone grassland.

The Berwickshire population represents almost the northern limit for this species in Britain. It is not prospering: indeed it is something of a disaster. The formerly extensive colony on the sea braes north of Burnmouth 96 is being progressively reduced by the spread of scrub, particularly *Cotoneaster* species. Meanwhile a dense colony on an eroding slope at Hilton Bay 95 has been almost overcome by the spread of scrub and brambles in just a few years following engineering work to stabilise the slope to protect the mainline railway above.

Sanguisorba officinalis Great Burnet

Wetland, extinct native, sown and naturalised, former rare or scarce

Berwickshire 1987-2013	0+1 sites	0.3% tetrads	4% hectads
Britain 1987-1999		11% tetrads	26% hectads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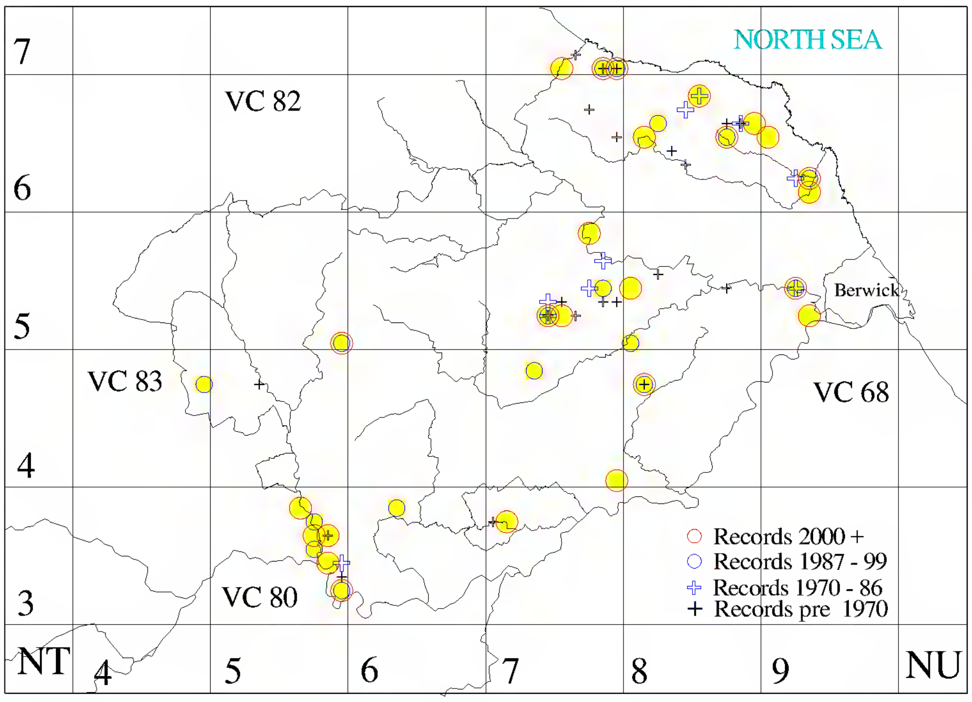
Sanguisorba officinalis is widespread in flushed grassland and riverbanks in central and northern England but rare in Scotland.

The last Berwickshire record as a native was at Bemersyde Moss 63 in 1978 where it was an outlier of a group of sites in the adjacent part of Roxburghshire. However this species has recently been sown in damp grassland by the Eye Water at Houndwood 86 in a conservation scheme to mitigate the damage caused by dualling a section of the A1 trunk road and it seems to have naturalised there in small quantity.

Sanicula europaea Sanicle

Woodland, native, other axiophyte

Berwickshire 1987-2013	3% monads	8% tetrads	57% hectads
Britain 1987-1999		29% tetrads	58% hectads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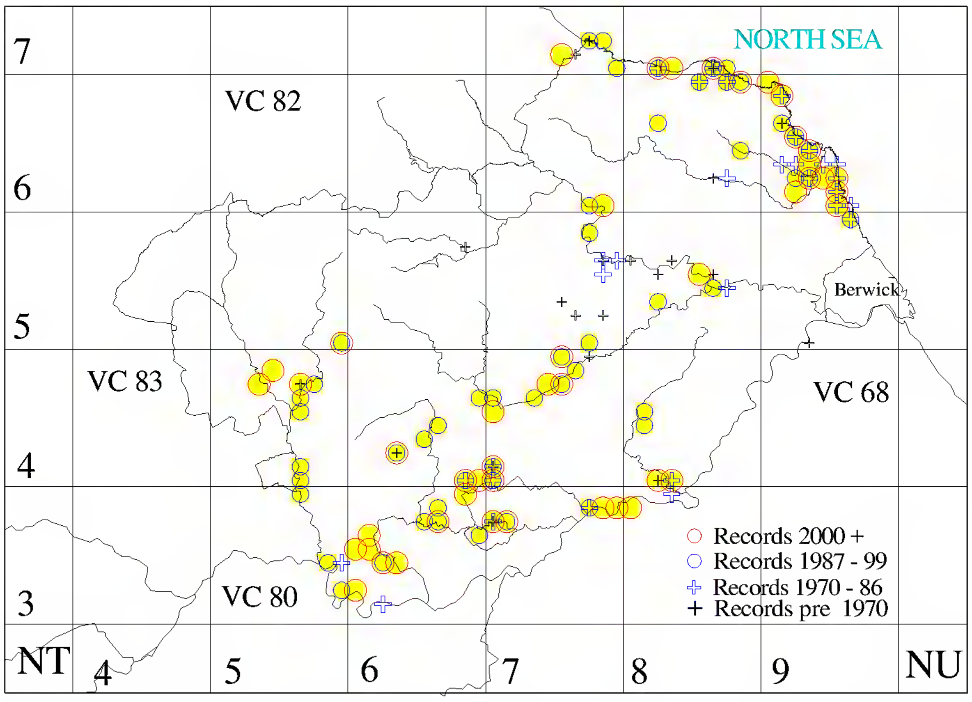
Sanicula europaea is widespread in Britain but rather local in many areas. It is a woodland herb favouring base-rich soils. The very restricted Berwickshire distribution is difficult to interpret. There is a cluster of sites in the Leader Water woodlands 53 and at Gaitheugh 53. Elsewhere some of the best-preserved ancient woodlands are colonised, such as those at Cromwells 55, Langtonlees 75 and Pease Dean 77, but there are also colonies on more surprising habitats such as those in the carr woodland round the raised bogs at Drone Moss 86 and Long Moss 86 and in a very poor remnant woodland at Whitlaw 44, though the latter may now be gone. Some colonies are in quite dry habitats, such as that on an old boundary bank in woodland at Paxton House 95.

The historical record suggests continuing losses over a long period. There may also have been colonisation: the carr woodland at Long Moss 86 follows peat cutting there and is thus thought to be relatively recent.

Saxifraga granulata Meadow Saxifrage

Grassland, native, Berwickshire fine

Berwickshire 1987-2013	7% monads	18% tetrads	74% hectads
Britain 1987-1999		5% tetrads	24% hectads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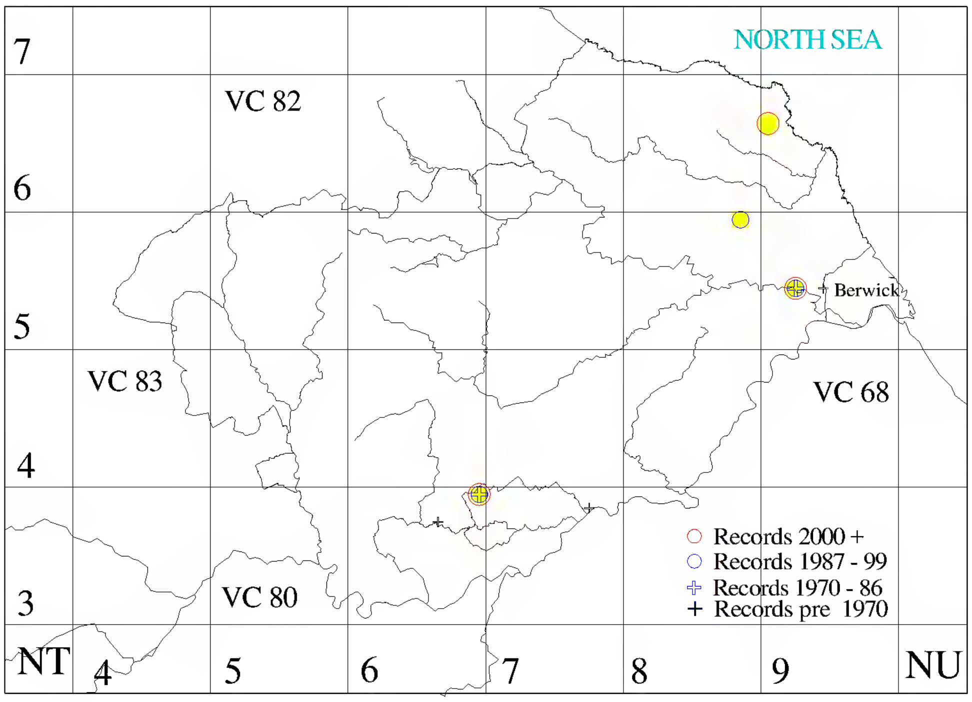
Saxifraga granulata is rather local in Britain, with a requirement for base-rich rocks, but not necessarily chalk or limestone. In Berwickshire it is best represented along the coast and on the igneous rocks of the Kelso Traps. In addition to the open rocky-grassland habitat it is found in a woodland-edge habitat along the Leader Water and its tributaries, along the Blackadder and Whiteadder Waters, by the Tweed near Birgham 73 and at the foot of the Ale Water. The population at The Hirsel 84 is largely of a double-flowered naturalised introduction.

S. granulata is probably declining due to the invasion of grassland by coarse grasses and scrub and to unfavourable woodland management. The root bulbils are probably transported around grassland sites by livestock and are possibly carried by the hooves of roe deer in woodland, but wider dispersal seems to be very rare.

Scabiosa columbaria Small Scabious

Grassland, native, rare or scarce

Berwickshire 1987-2013	2+1½ sites	1% tetrads	17% hectads
Britain 1987-1999		7% tetrads	20% hectads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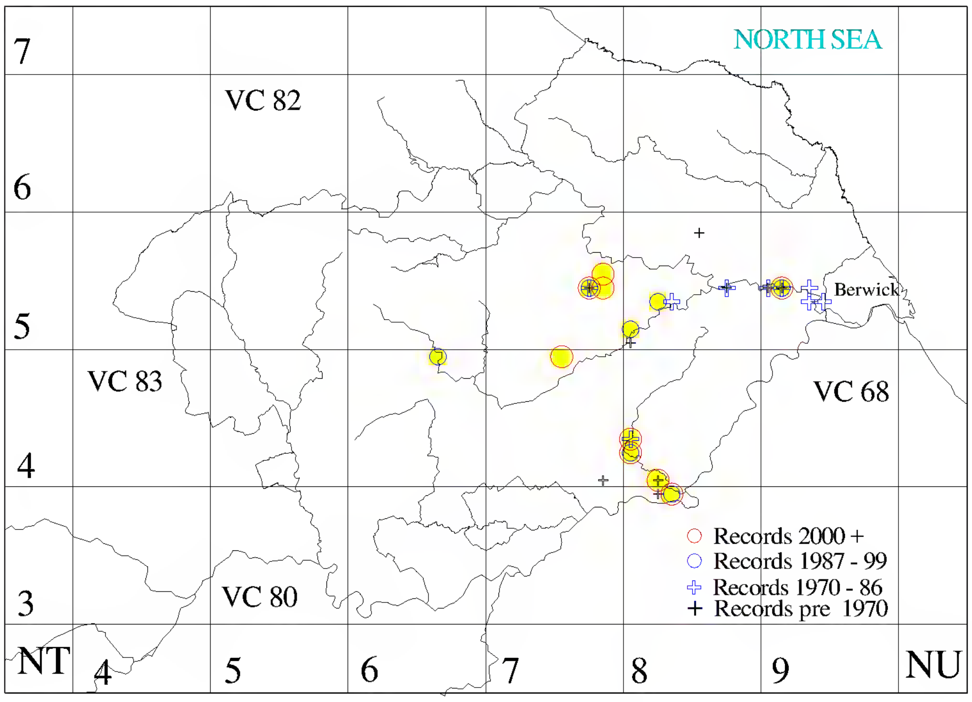
Scabiosa columbaria is widespread in chalk and limestone grassland in England but rare in Scotland.

It is almost extinct in Berwickshire. A few plants grow at the base of a small craig near Hareheugh Craigs 63 and a few more survive at the top of a steep eroding slope at the south end of Foulden Dean 95 where it was quite plentiful in 1979. It was recently noted as a component of a sown wildflower mix at Causewaybank Sandpit 85, where it may have already died out, and at Coldingham Priory 96.

Schoenoplectus lacustris Common Club-rush

Riverside, native, rare or scarce

Berwickshire 1987-2013	7¾ sites	2% tetrads	30% hectads
Britain 1987-1999		9% tetrads	33% hectads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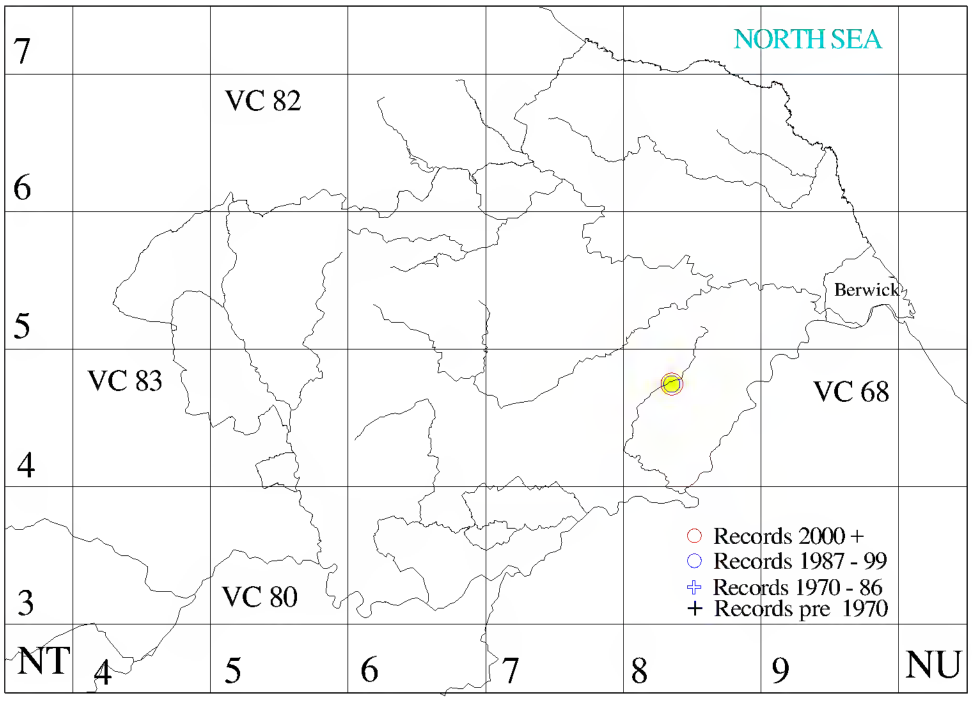
Schoenoplectus lacustris is an emergent of slow or standing water that is widespread in central and south-eastern England but more local and more western in the north.

As a Berwickshire native its distribution is concentrated in a series of colonies by the Leet Water and lower Blackadder and Whiteadder Waters that have lent a distinctive character to these watersides. However it has recently declined, particularly by the Blackadder and Whiteadder and is currently known only by the Mouth and Kelloe Bridges 84 and in a pool at the foot of the Foulden Braes 95. By the Leet it is at Wylie Cleugh 84, The Hirsel 84 and just above Coldstream 83. Much the most extensive colony is at Wylie Cleugh where it is adjacent to large stands of *Carex riparia* Greater Pond-sedge and other sedges. Away from the rivers there is quite a large colony in a floating mat of vegetation in the Hen Poo at Duns Castle 75 where it may may or may not be native.

Schoenoplectus tabernaemontani Grey Club-rush

Riverside, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		4% tetrads	18% hectads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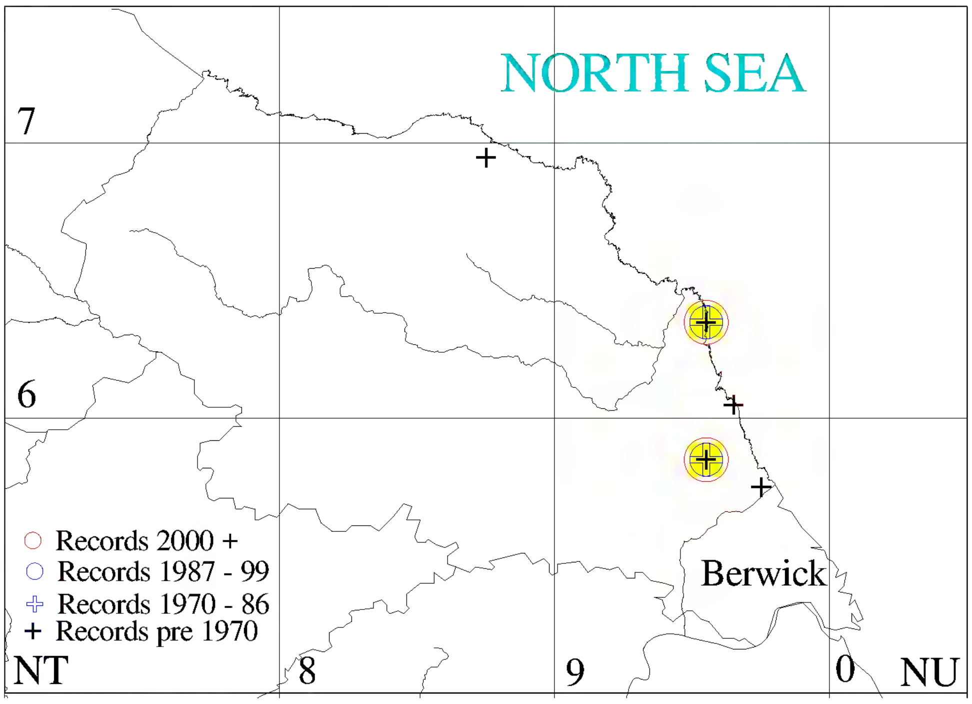
Schoenoplectus tabernaemontani is an emergent of muddy watersides, especially near the sea. It is local inland and on the coast in southern Britain but scarcer and almost exclusively coastal in Scotland.

There is an almost no suitable coastal habitat in Berwickshire, so its near-absence is not unexpected. There is a single dense colony in a pond at Morningbank 84 which may be a former oxbow of the Leet Water.

Schoenus nigricans Black Bog-rush

Coast, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		8% tetrads	18% hectads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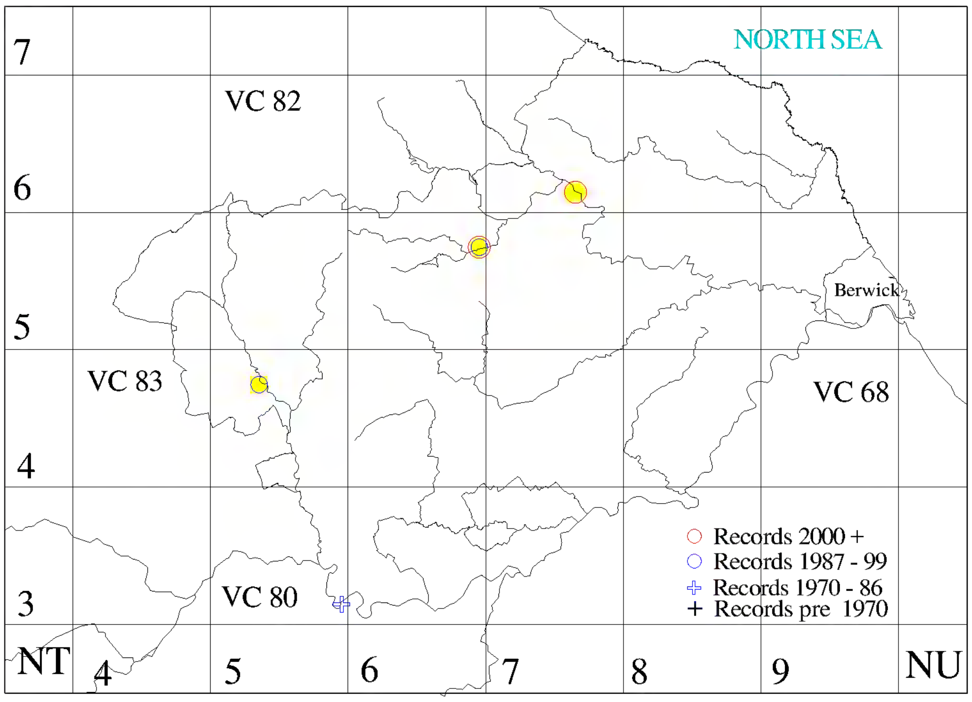
Schoenus nigricans grows mainly in base-rich flushes and fens and is very widespread in western Scotland but local elsewhere.

One of the Berwickshire colonies is on a spectacular rim of wet rocks by the sea at Gunsgreen 96 and the other in a species-rich calcareous flush on Lamberton Moor 95 where it is plentiful over an area of 100x100m.

Scilla lilio-hyacinthus (S. liliohyacinthus) Pyrenean Squill

Woodland, neophyte

Berwickshire 1987-2013	3 sites	1% tetrads	13% hectads
Britain 1987-1999		0.1% tetrads	1% hectads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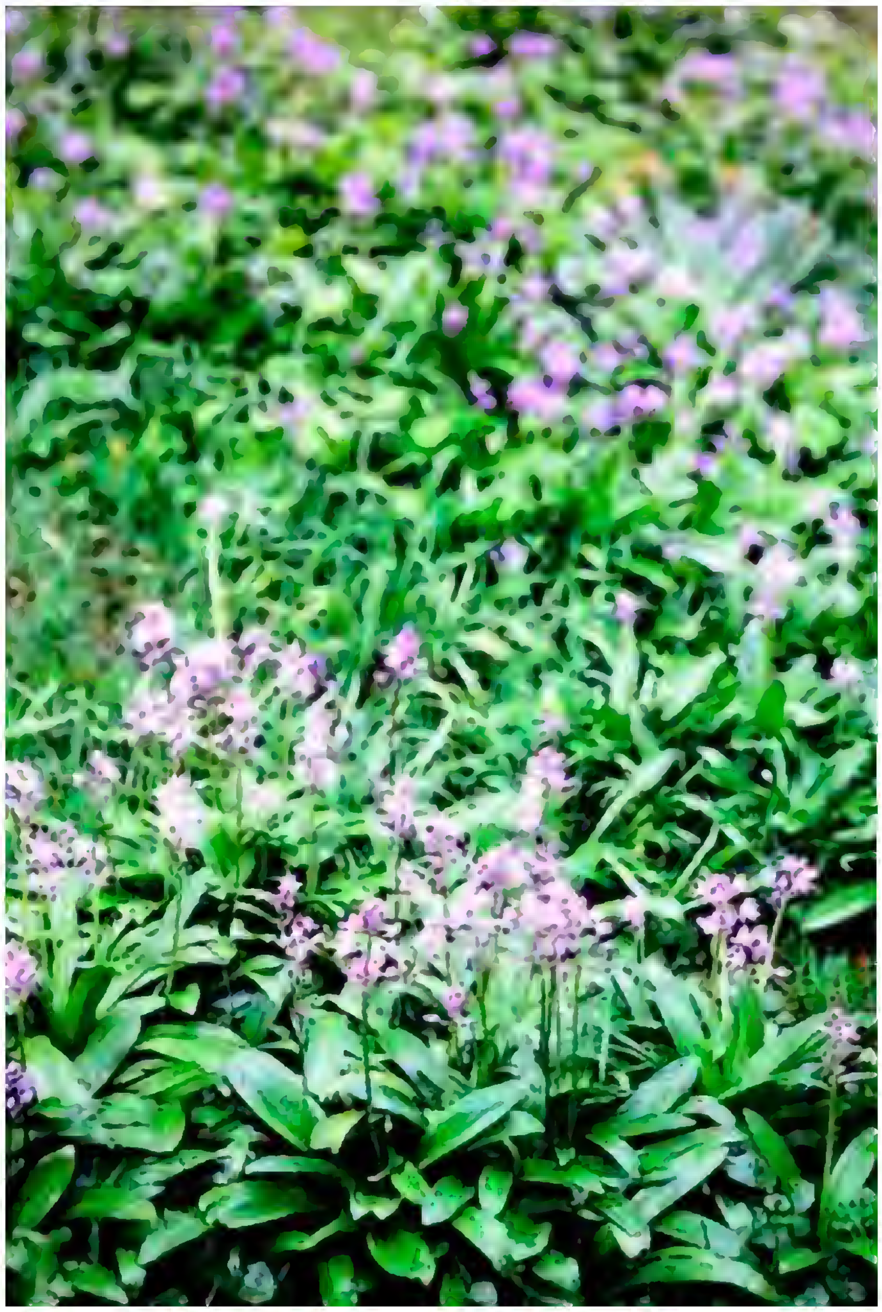
Scilla lilio-hyacinthus is rather uncommon as a garden plant and seldom found in the wild in Britain. However there are a series of colonies in Roxburghshire and Berwickshire in mansion house policies where it sometimes forms extensive patches under light shade. The largest Berwickshire colonies are at and near Longformacus House 65, but there is also a long-established colony at Abbey St Bathans in Shannabank Wood 76. Three plants were found below a wall in Lauder 54 and there was formerly a colony at Dryburgh Abbey 53

[Photo next page]

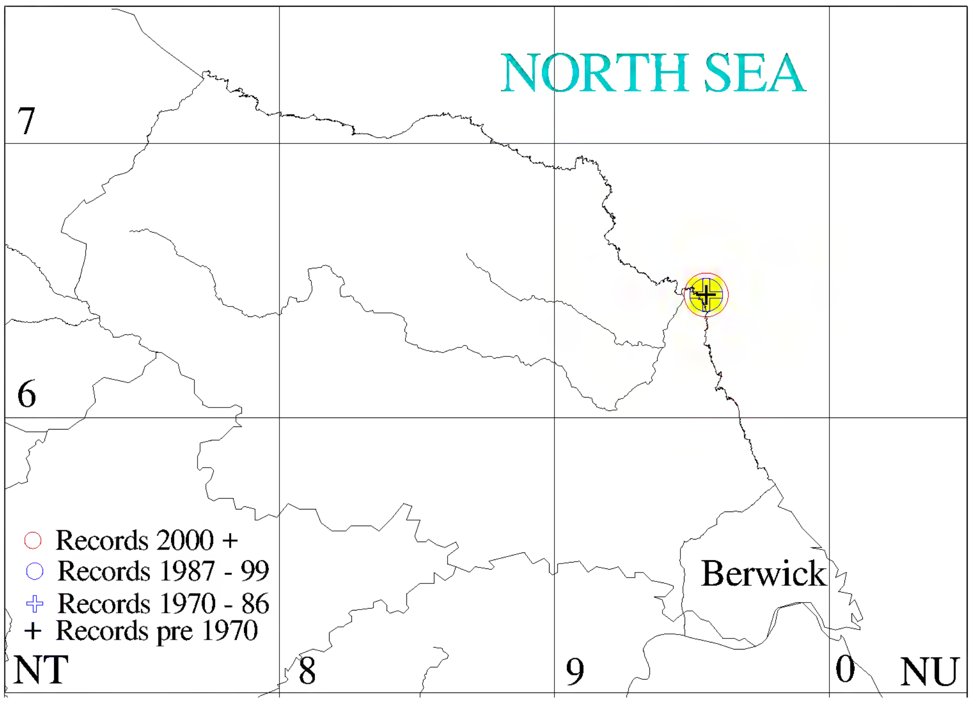


Scilla lilio-hyacinthus
Longformacus 1997

Scilla verna Spring Squill

Coast, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		2% tetrads	9% hectads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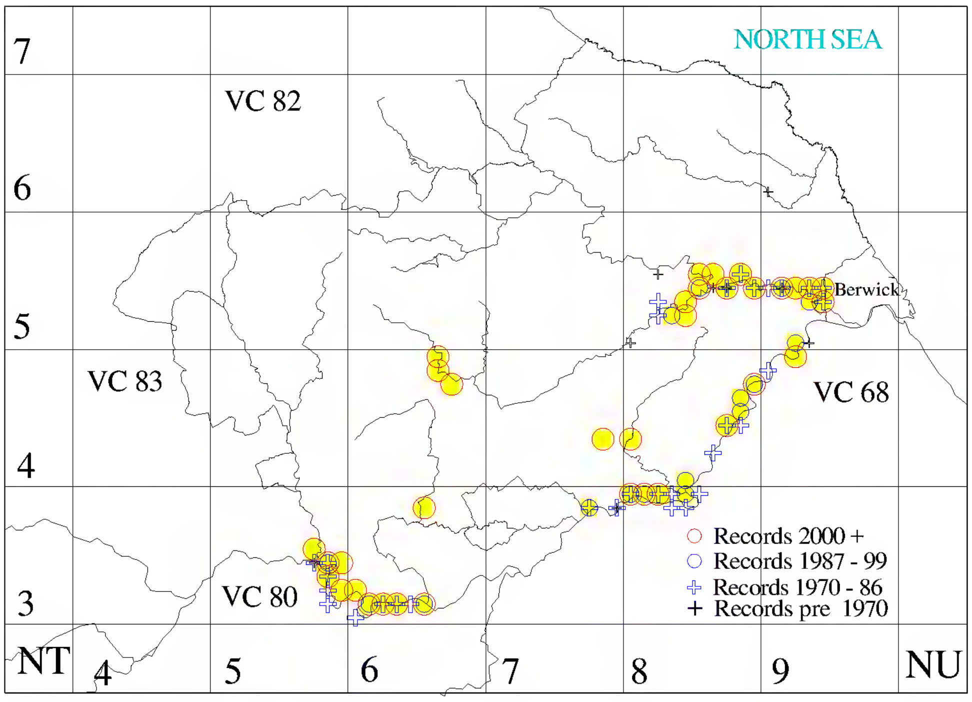
Scilla verna is found on maritime heath on sea cliffs. It is widespread but local from the Scilly Isles to Shetland, but is rare on the east coast. The Berwickshire and North Northumberland sites are disjunct from the main distribution.

The one Berwickshire site at Gunsgreen 96 is vulnerable because of its position within the recently developed Eyemouth golf course. The *Scilla* grows with *Calluna* Heather on a tiny headland where it is abundant over an area of about 20x10m with several outlying patches nearby.

Scirpus sylvaticus Wood Club-rush

Riverside, native, other axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	43% hectads
Britain 1987-1999		3% tetrads	18% hectads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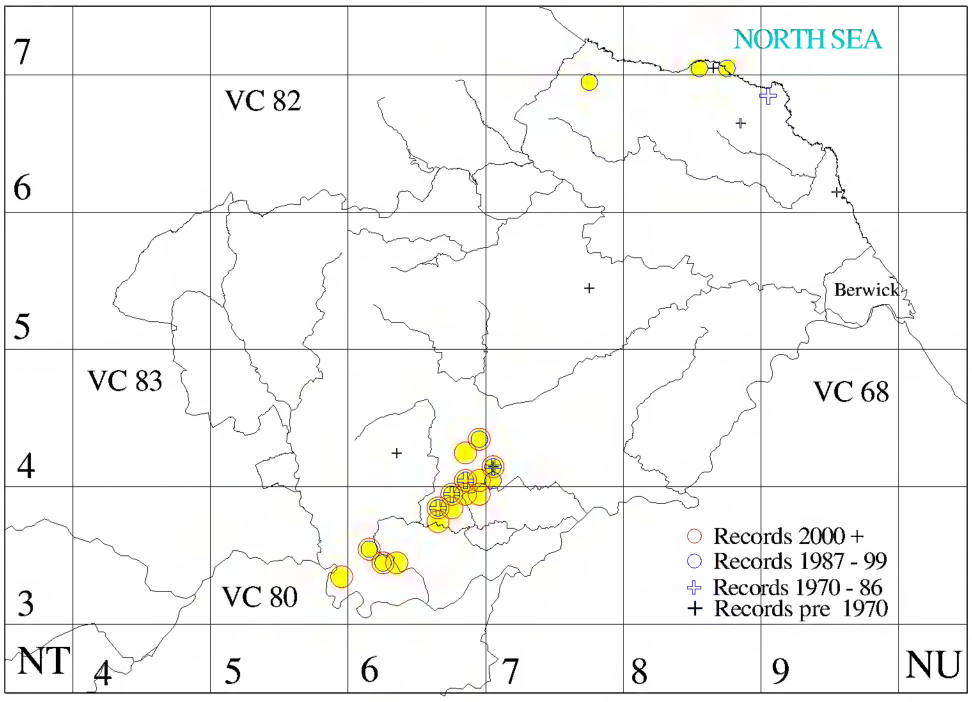
Scirpus sylvaticus is rather locally plentiful in Britain north to central Scotland. At least in Berwickshire it is a riverside plant forming large colonies in mildly basic alluvial deposits and sometimes amongst riverside rocks where there is some silt deposition. It has long been known along the River Tweed and the lower stretches of the Blackadder and Whiteadder Waters. Further colonies are now known by the Eden, upper Blackadder and Leet Waters.

It is not known whether the recently discovered colonies represent recent colonisation as all are in formerly little-botanised areas. They are most likely to be long-established.

Scleranthus annuus Annual Knawel

Grassland, native, rare or scarce

Berwickshire 1987-2013	14¼ sites	3% tetrads	26% hectads
Britain 1987-1999		3% tetrads	11% hectads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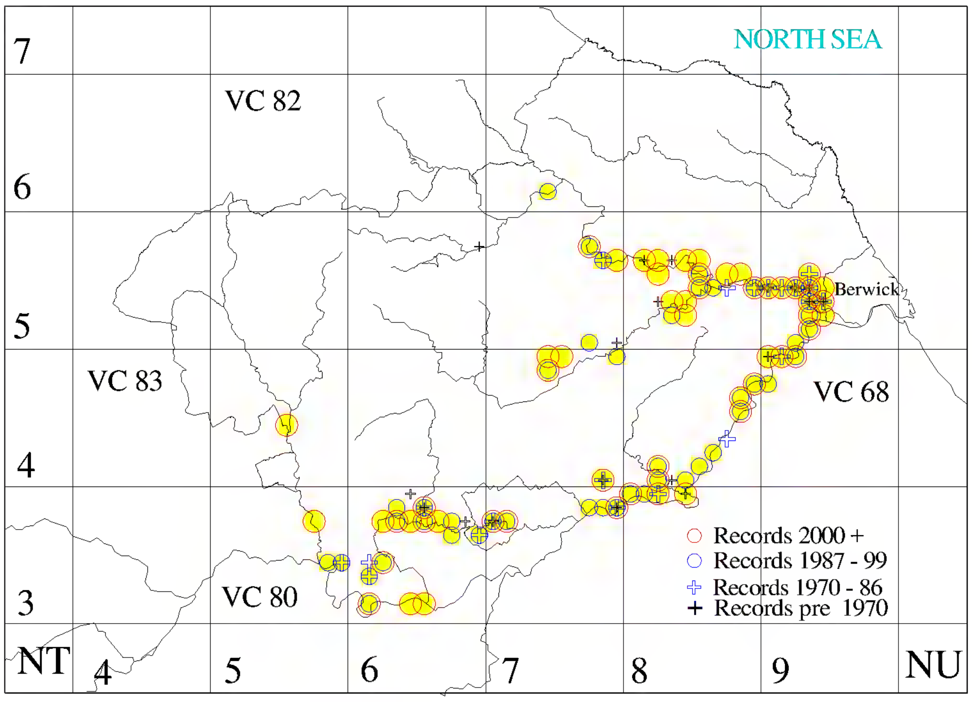
Scleranthus annuus is widespread in Britain but local and declining. It is an annual of rocky knowes and sandy soil that was formerly also a weed of arable fields.

The Berwickshire sites lie mainly on the intrusive rocks of the Kelso traps. The *Scleranthus* colonies are mostly small and vulnerable to eutrophication and under-grazing. Numbers vary markedly from year to year. The main sites are at Bemersyde Hill 53, Butchercote Craigs 63, Brotherstone Hill 63, many places near Girrick 63, Lurgie Craigs 63, Hareheugh Craigs 64 and Hume Craigs 74. The *Scleranthus* has not been seen recently at its former site in the fields near Dowlaw Dean 87 or elsewhere along the coast.

Scrophularia umbrosa Green Figwort

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	6% monads	14% tetrads	52% hectads
Britain 1987-1999		1% tetrads	4% hectads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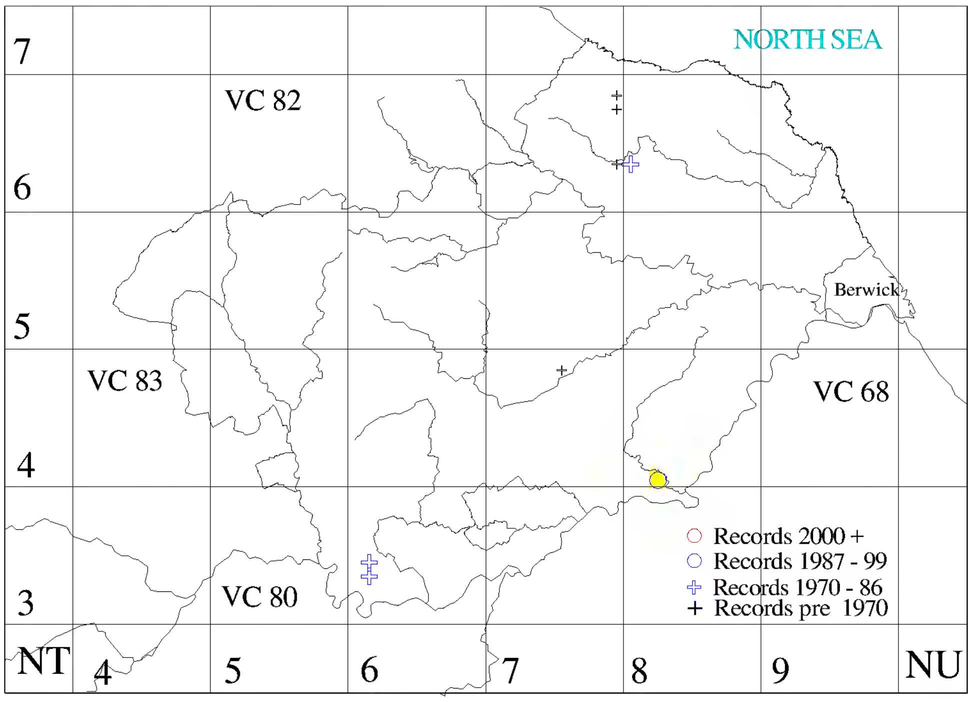
Scrophularia umbrosa is a local plant of watersides not recorded in Britain until the nineteenth century. It was at first confused with the native *S. auriculata* Water Figwort. The first Berwickshire record was in 1833, which may be the first British record. It has increased dramatically in the county in the last forty years and has become almost ubiquitous by the Tweed, Blackadder and Whiteadder. It has also colonised a few wetland sites away from the rivers and has only recently appeared in the Leader Water.

Scutellaria galericulata Skullcap

Wetland, native, rare or scarce

Berwickshire 1987-2013	½ sites	0.3% tetrads	4% hectads
Britain 1987-1999		13% tetrads	47% hectads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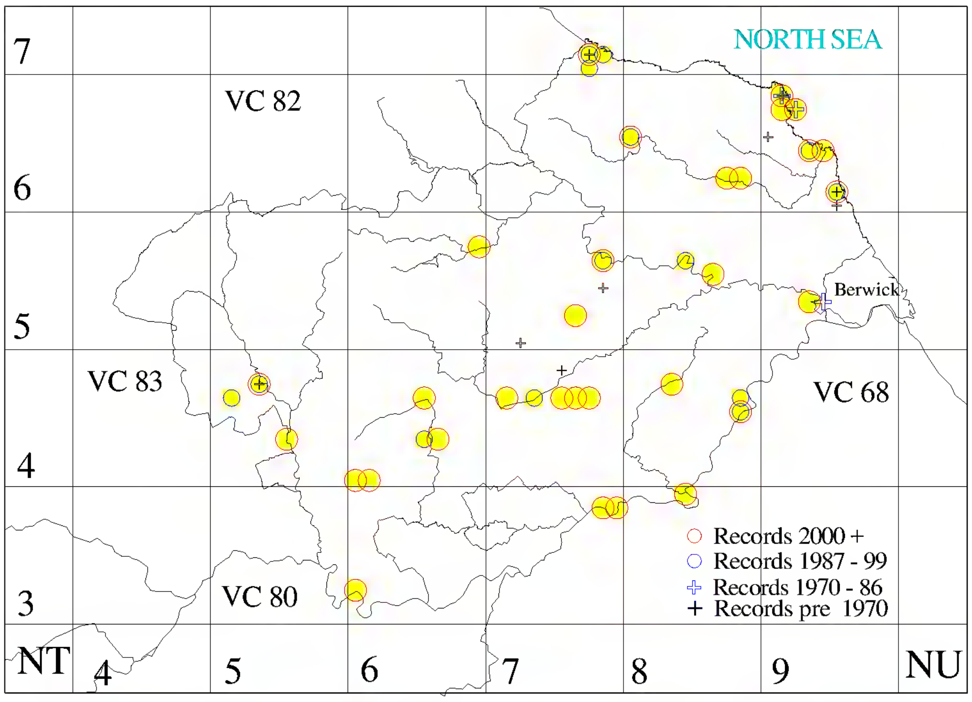
Scutellaria galericulata is a plant of various wetland habitats. It is very widespread in England, Wales and western Scotland but scarce in eastern Scotland.

It is almost extinct in Berwickshire. The only relatively recent record was on the north side of Hirsel Lake 84 in 1997 where it could not be refound in 2009. It could conceivably still be present at Bemersyde Moss 63 where it was last seen in 1974 but might have been overlooked since.

Sedum album White Stonecrop

Ruderal, neophyte, intrusive neophyte

Berwickshire 1987-2013	3% monads	9% tetrads	61% hectads
Britain 1987-1999		21% tetrads	48% hectads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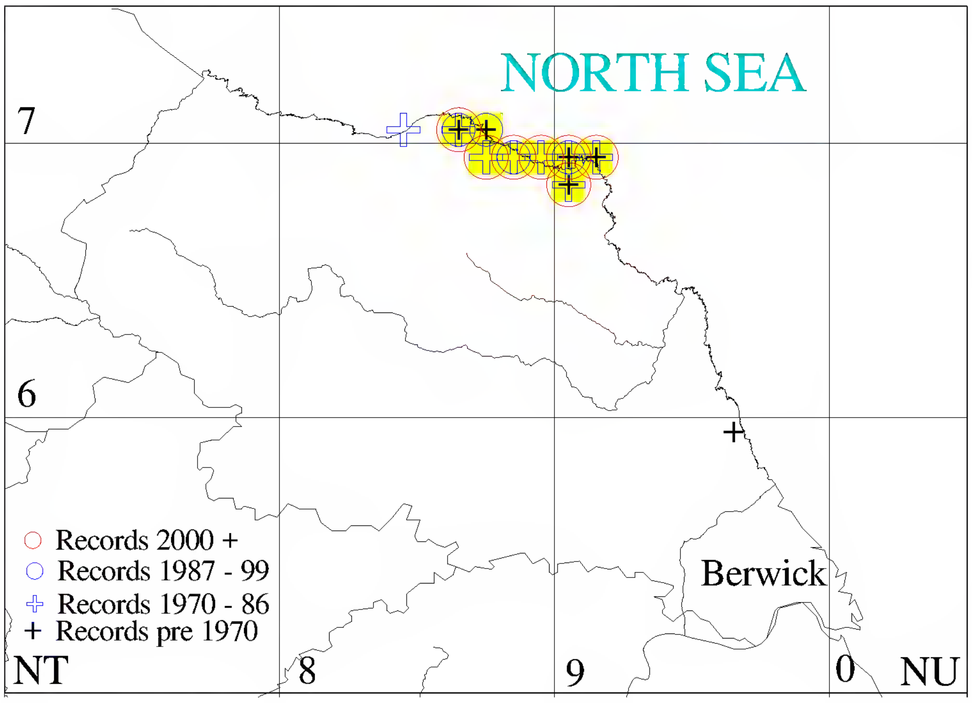
Sedum album has become very widespread in England but is as yet less so in Scotland. It is an invasive plant forming carpets over rocky surfaces, whether on man-made habitats such as gravel paths or rubble or in natural rocky grassland. There are spectacular colonies of a red-leaved variety on the old runways at Charterhall Airfield 74. It is colonising species-rich cliffs at St Abbs Head 96 to the detriment of the native flora and threatens to do the same near Eyemouth 96 and Burnmouth 96.

***Sedum album* Charterhall Airfield 2013**

Sedum rosea Roseroot

Coast, native, rare or scarce

Berwickshire 1987-2013	9 sites	1% tetrads	13% hectads
Britain 1987-1999		5% tetrads	14% hectads



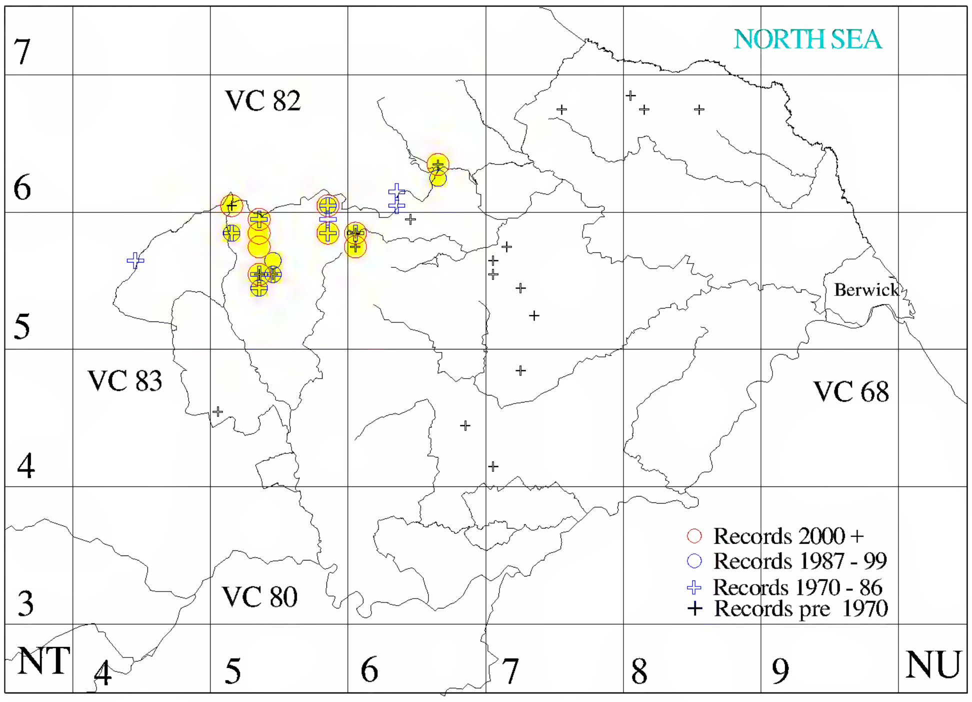
Sedum rosea grows on sea cliffs and montane rock ledges. It is widespread in north-west Scotland but very local elsewhere.

In Berwickshire it is quite frequent on sea cliffs from St Abbs Head 96 to Fastcastle 87 and also in Dowlaw Dean 87 where its colony extends for a few hundred metres up the dean from the waterfall at the sea cliff. These coastal colonies are much the furthest south on the east coast of Britain. Some of the best colonies are at St Abbs Head itself where they are inaccessible, growing midway up the cliffs. The Dowlaw Dean plants can be reached with care.

Sedum villosum Hairy Stonecrop

Wetland, native, rare or scarce, British scarce

Berwickshire 1987-2013	8¼ sites	3% tetrads	17% hectads
Britain 1987-1999		0.7% tetrads	3% hectads



Sedum villosum is local in northern England and Scotland with its headquarters in the Southern Uplands.

S. v. sometimes occurs in sub-montane flushes on steep slopes where the ground is stony. The communities are kept open by erosion and the more stable ones are rich in bryophytes such as *Climacium dendroides*, *Marchantia polymorpha subsp. montivagans* and *Philonotis fontana*. More frequently, at least in Berwickshire, *S. v.* also grows in flushes on gentle slopes where the communities are kept open by a steady flow of cold water and a relatively acid reaction. Similar bryophytes are present but there are more vascular plant associates: a small form of *Caltha palustris* Marsh Marigold, *Chrysosplenium oppositifolium* Opposite-leaved Golden-saxifrage, *Galium uliginosum* Fen Bedstraw, *Montia fontana subsp. fontana* Blinks, *Myosotis secunda* Creeping Forget-me-not and *Stellaria alsine* Bog Stichwort. Sedges *Carex* species are few, with *C. echinata* occasional. In the most favoured communities rushes *Juncus* species are notable for their near-absence, though a little depauperate *Juncus articulatus* is often present. These gentle-slope communities appear to have become very subject to change. They may be degraded by the invasion of rushes, *Juncus* species especially *J. effusus*, and sometimes by *Filipendula ulmaria* Meadowsweet. These taller species suppress the low-growing ones to varying degrees. In other

cases the change is more subtle: the species present hardly change but the vegetation cover becomes more complete and the open water habitat is lost. A third habitat for *S. v.* is on low ledges by the burns; typically stabilised by a rock ledge and kept wet by adjacent flushing. These have a similar plant community to the open flushes on gentle slopes except that *Epilobium brunnescens* New Zealand Willowherb is often present.

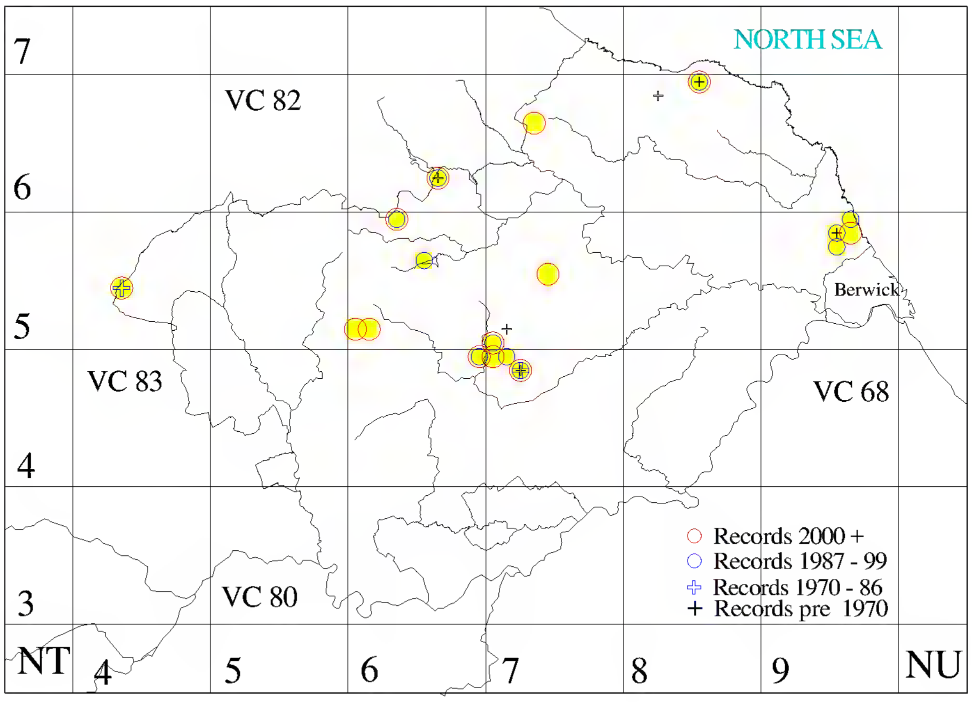
All Berwickshire sites were revisited between 2008 and 2010; several sites were visited more than once and further sites were looked for. This resurvey enabled the fate of the historical sites to be analysed. Colonies that might have been overlooked were scored accordingly. Between 1831 and 1899 *S. v.* was recorded from eleven monads. It survives in one only, an average rate of loss of 14% a decade. Between 1900 and 1978 *S. v.* was recorded from ten monads. It survives in four only, an average rate of loss of 17% a decade. Between 1979 and 1999 *S. v.* was recorded from ten monads. It survives in five only, an average rate of loss of 28% a decade. Despite the limitations of small sample sizes, this analysis suggests a sharply increased rate of loss in the last two decades.

The sites where *S. v.* was found in 2008-2010 are by the Soonhope Burn 55, Longformacus Burn 55, the head of the Dye Water 55, Lammerlaw Burn 56, Wester Black Burn 56 and Green Cleugh 65.

Selaginella selaginoides Lesser Clubmoss

Wetland, native, rare or scarce

Berwickshire 1987-2013	12¾ sites	4% tetrads	39% hectads
Britain 1987-1999		20% tetrads	26% hectads



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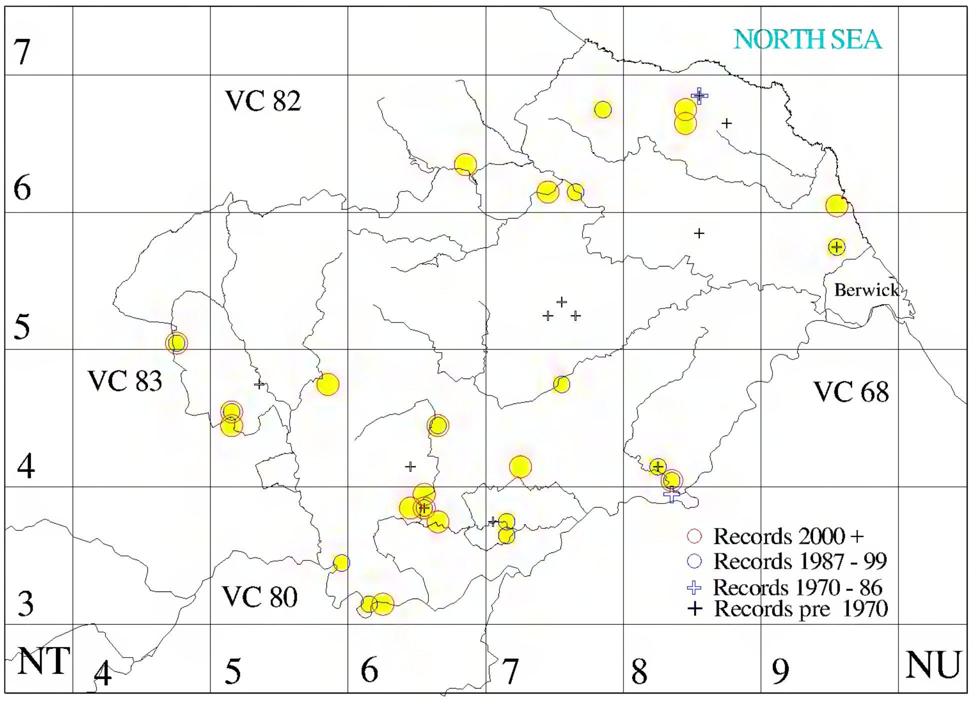
Selaginella selaginoides is very widespread in north and west Scotland but more local elsewhere. It favours base-rich flushes.

It is poorly represented in Berwickshire where its colonies are small and vulnerable to small-scale disturbance and vegetation succession. It is present on Clints Hill 45, above Raecleugh 65, in Stot Cleugh 65, in Rough Cleugh 66, by the Fangrist Burn and Flourishwalls Burn on Greenlaw Moor 74, in Hells Cleugh and Cat Cleugh 75, near Lumsdaine Dean 86 and on the sea braes below Lamberton Shiels 95. It is often associated with *Parnassia palustris* Grass-of-Parnassus.

Senecio aquaticus Marsh Ragwort

Wetland, native, other axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	57% hectads
Britain 1987-1999		29% tetrads	64% hectads



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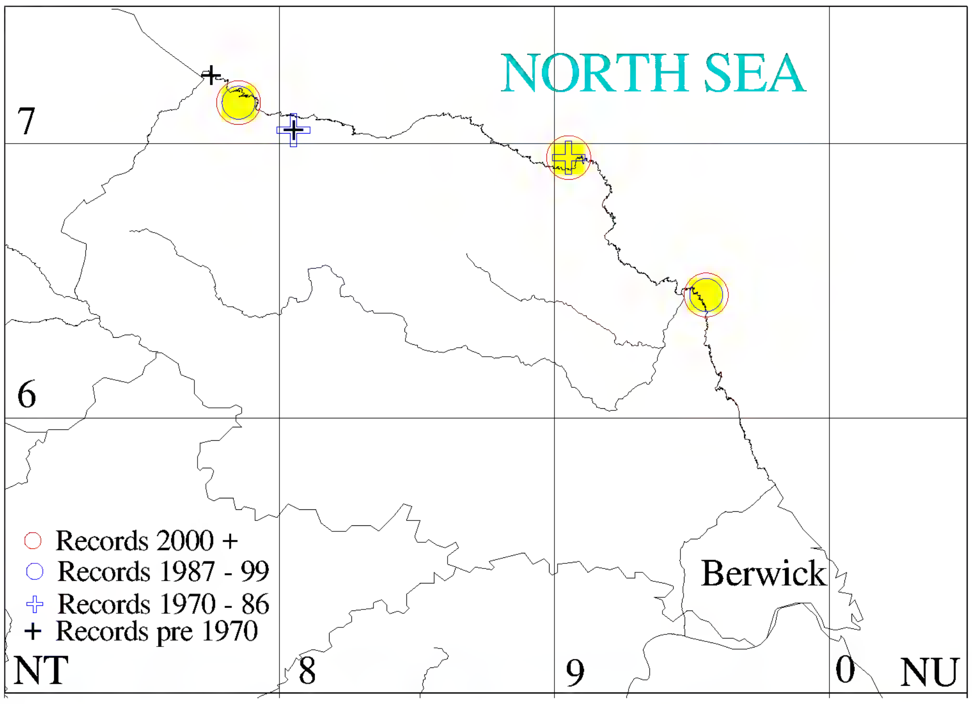
Senecio aquaticus is such a widespread plant of wet meadows on acidic soils in the west of Britain that its local distribution in Berwickshire is hard to explain. It is found at the edges of Longmuir Moss 45 and Drone Moss 86 and in burnside habitat by the Lauder Burn 54 and the Eden and Leet Waters. It is rare by the River Tweed and the upper Whiteadder Water where it may be more or less casual. The hybrid with *S. jacobaea* Common Ragwort, *S. x ostenfeldii*, has been recorded in eight monads.

There is some evidence of colonisation by rivers, but the number of plants involved is small, suggesting casual occurrences. There have been losses at various dates in the past which may relate as much to an inability to cope with eutrophication as to drainage.

Seriphidium maritimum (Artemisia maritima) Sea Wormwood

Coast, native, rare or scarce

Berwickshire 1987-2013	3 sites	0.9% tetrads	9% hectads
Britain 1987-1999		0.5% tetrads	5% hectads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Seriphidium maritimum is a herb of the upper saltmarsh and coastal shingle that is rather local in Britain and most frequent in south-east England.

Three colonies are known in Berwickshire. It grows at the back of a shingle beach at Cove 77, on a sea stack and luxuriantly on shingle below at Broadhaven Bay by St Abbs Head 96 and at the foot of rocks near Gunsgreen 96.

There may well be a slow cycle of colonisation and losses due to storm damage.

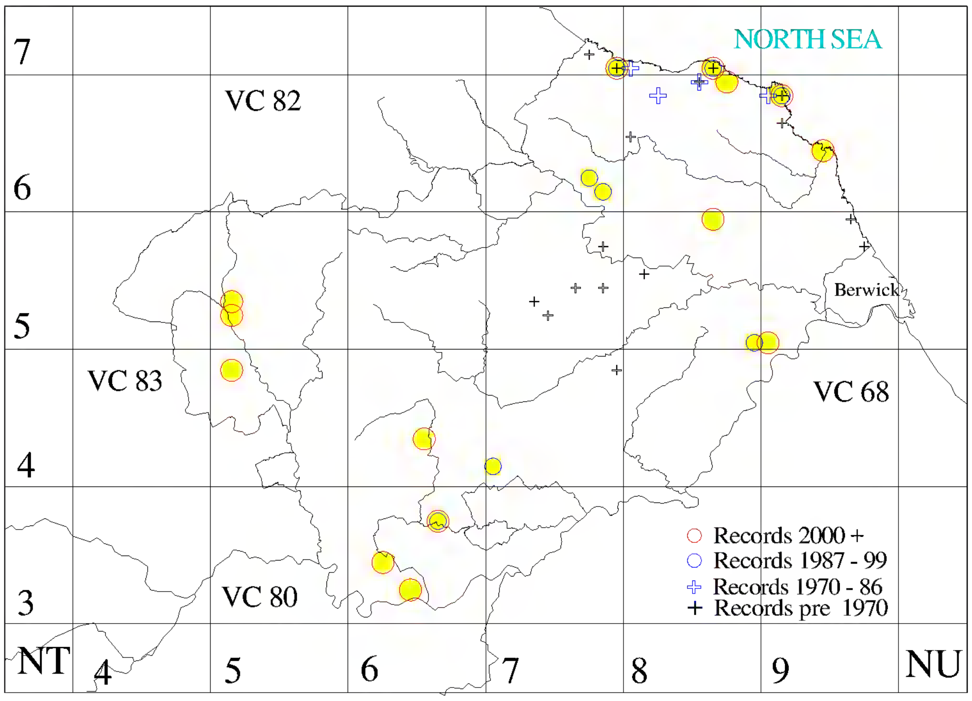
Broadhaven Bay 2006

Gunsgreen 2010

Sherardia arvensis Field Madder

Grassland, native, rare or scarce

Berwickshire 1987-2013	15¼ sites	5% tetrads	52% hectads
Britain 1987-1999		21% tetrads	41% hectads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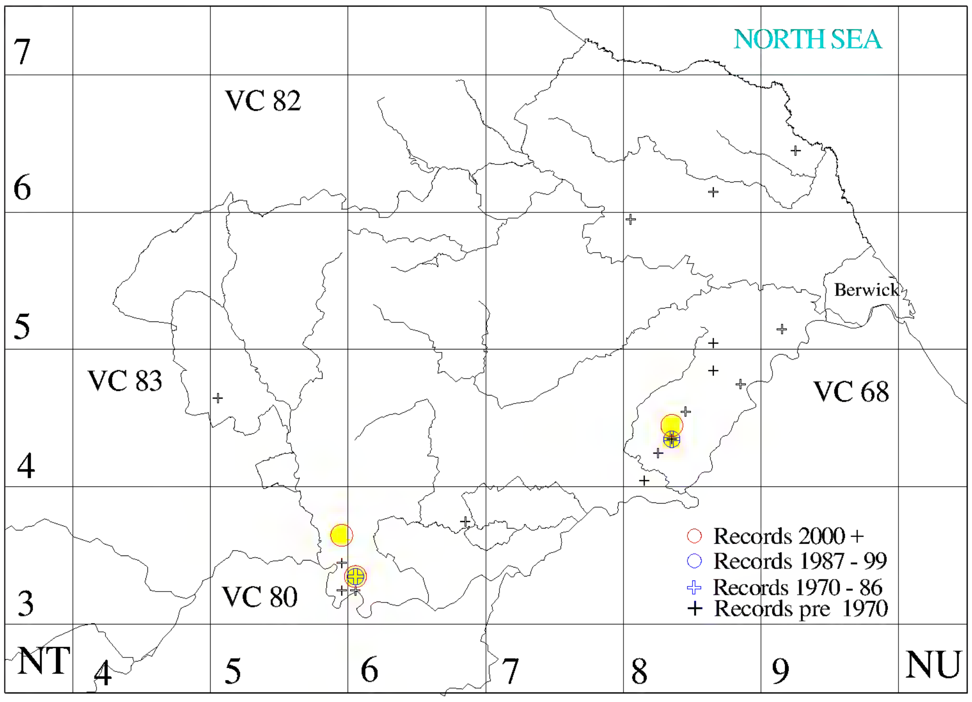
Sherardia arvensis is an annual of dry grassland, dunes and arable fields that is widespread but decreasing in southern Britain but scarcer in Scotland.

It is rather more widespread in Berwickshire than was feared until the recent survey but is highly localised and usually present in small quantity only, sometimes as a casual of disturbed ground. The better colonies are those at Muckle Thairn 63 and fields near Dowlaw Dean 87. Other permanent sites are at Butchercote Craigs 63, Winfield Airfield 95 and in screes below Kirk Hill at St Abbs Head 96.

Silaum silaus Pepper-saxifrage

Grassland, native, rare or scarce

Berwickshire 1987-2013	3 sites	1% tetrads	13% hectads
Britain 1987-1999		7% tetrads	25% hectads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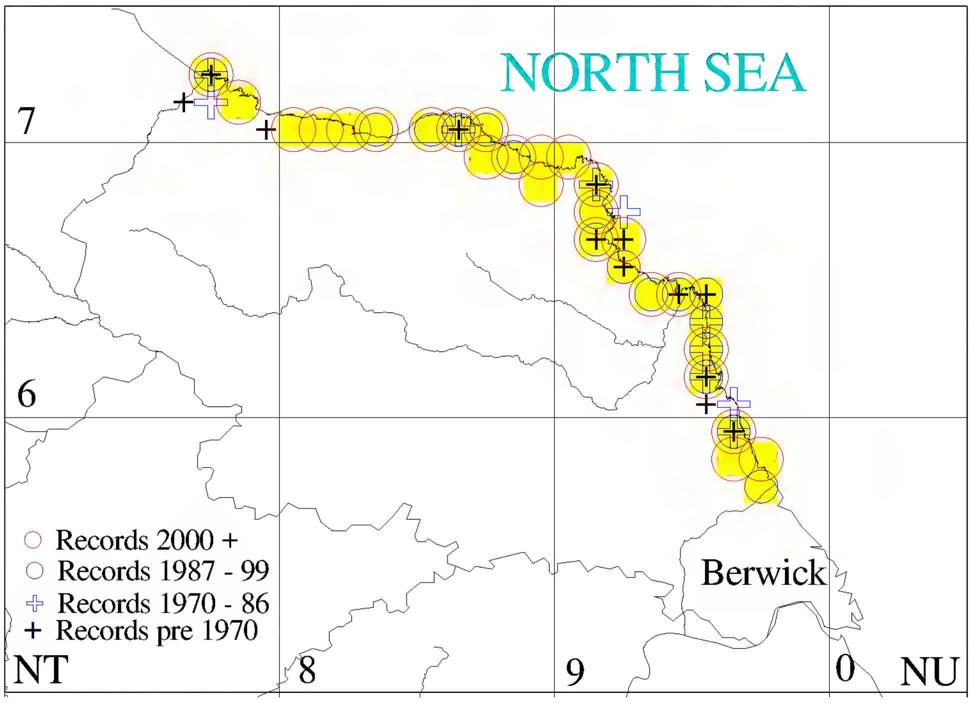
Silaum silaus is found in damp neutral grassland. It is still quite widespread in England but is rare in Scotland.

It is apparently in danger of extinction in Berwickshire. Recent records have been of just a few plants on the margin of Redpath Moss 53 and Bemersyde Moss 63 and also on a broad roadside verge near Butterlaw 84.

Silene uniflora Sea Campion

Coast, native, other axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	22% hectads
Britain 1987-1999		7% tetrads	26% hectads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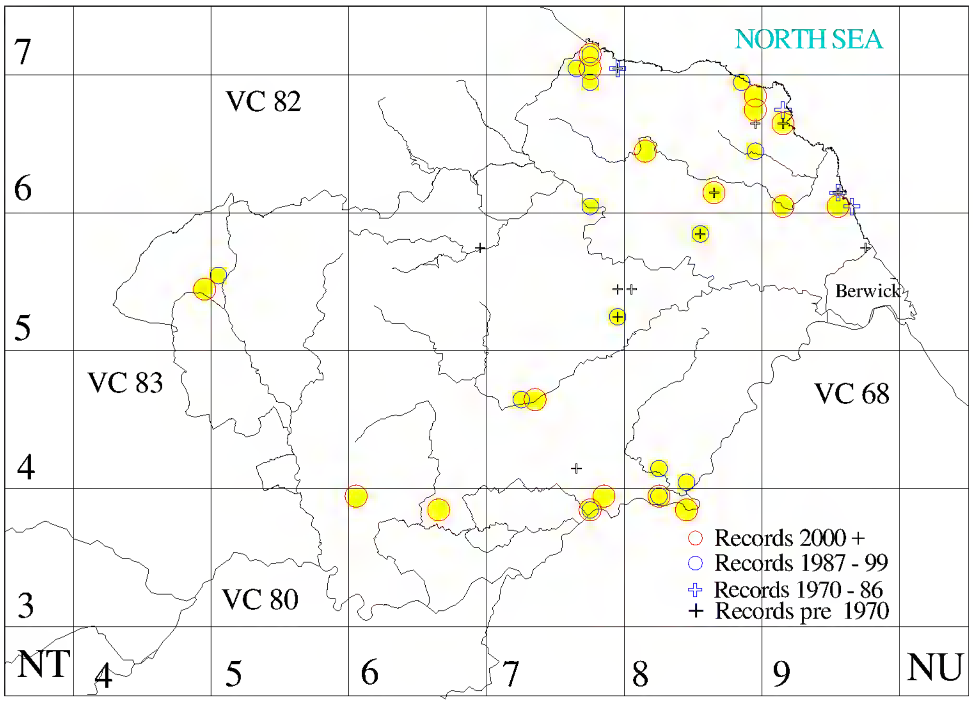
Silene uniflora is quite plentiful round much of the British coast and Berwickshire is no exception. Nevertheless the habitat occupied by this species is more restricted than *Armeria maritima* Thrift. The *Silene* is found on cliffs, rocks and boulder beaches open to the sea and it seldom ventures to the inland knowes at St Abbs Head 96 favoured by the *Armeria*.

There is no evidence of decline or of any spread to road verges. The only inland colony is on a knowe on the west side of Coldingham Loch 86, 400m from the sea.

Silene vulgaris Bladder Campion

Grassland, native

Berwickshire 1987-2013	3% monads	7% tetrads	57% hectads
Britain 1987-1999		44% tetrads	22% hectads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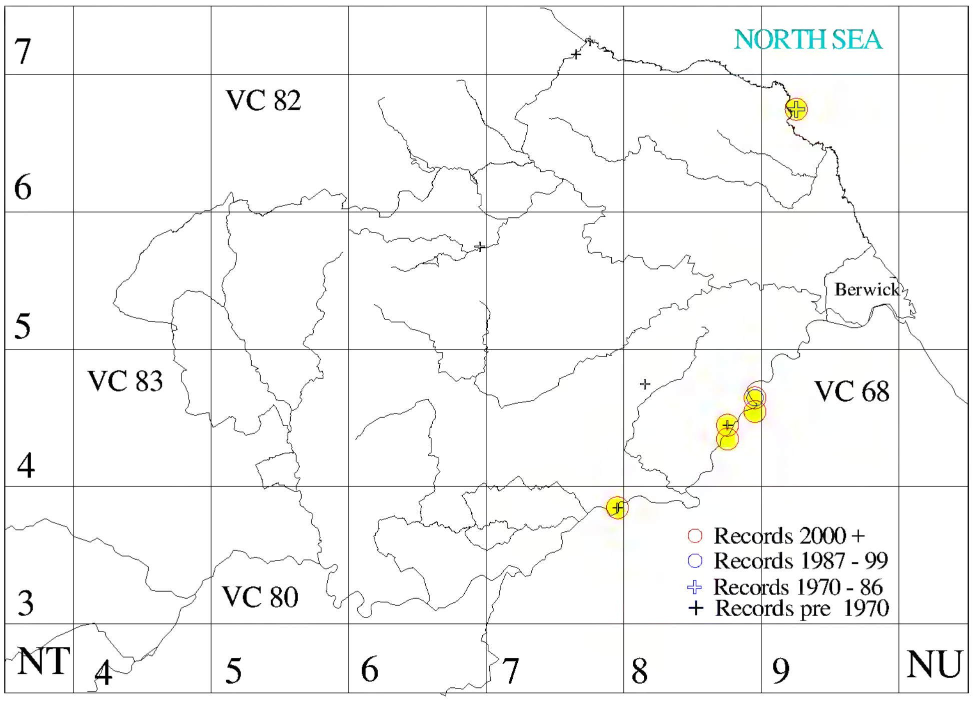
Silene vulgaris is much more widespread in England than Scotland in dry grassland and more ruderal habitat.

Many, but not all, of the Berwickshire sites are in species-rich grassland, especially on roadside verges where it is often associated with the archaeophyte *Silene latifolia* White Campion. Indeed *S. vulgaris* could also be an archaeophyte in Berwickshire. There are clusters of sites on the limestone near Coldstream 73, 83 and on sandy soils near Coldingham 86 and Cockburnspath 77.

Silybum marianum Milk Thistle

Grassland, casual

Berwickshire 1987-2013	1% monads	2% tetrads	13% hectads
Britain 1987-1999		1% tetrads	8% hectads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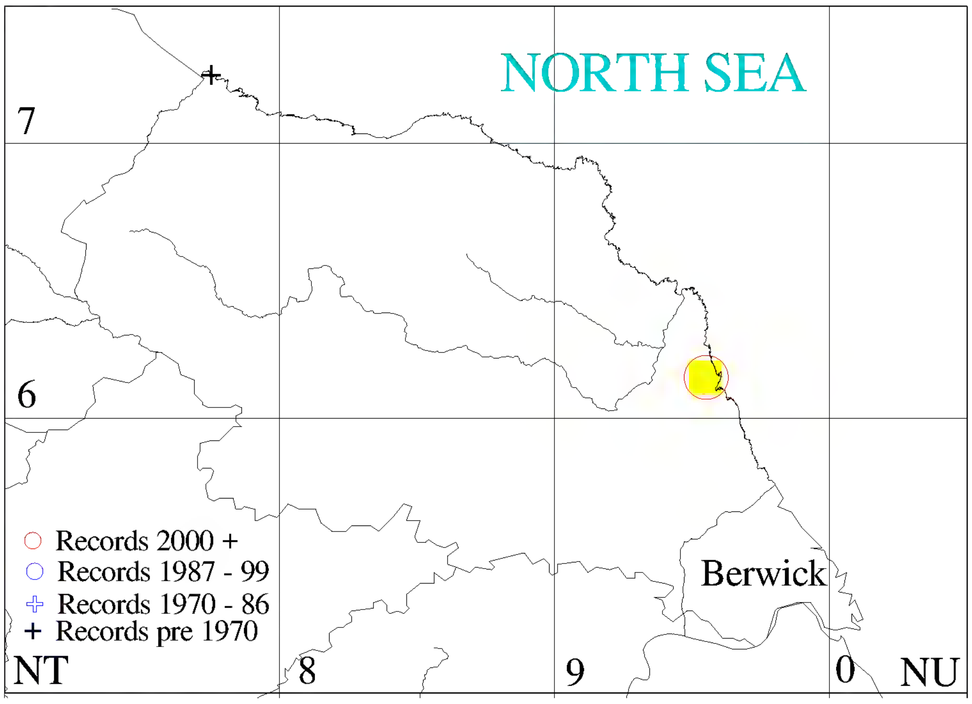
Silybum marianum is quite widespread in southeast England where it is often casual in ruderal situations but is well established in some coastal habitats.

This annual or biennial species with a persistent seed bank has a more or less permanent but fluctuating population by the River Tweed. It is especially fond of places where alluvium tends to be deposited after floods, providing a short-lived open habitat. It has been noted recently below Birgham 73, near Milne Graden 84 and below Ladykirk House 84. There is a separate long-established population on crumbling cliffs near St Abbs village 96 where it favours an area where garden rubbish is often dumped.

Smyrnium olusatrum Alexanders

Coast, probable archaeophyte, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		8% tetrads	25% hectads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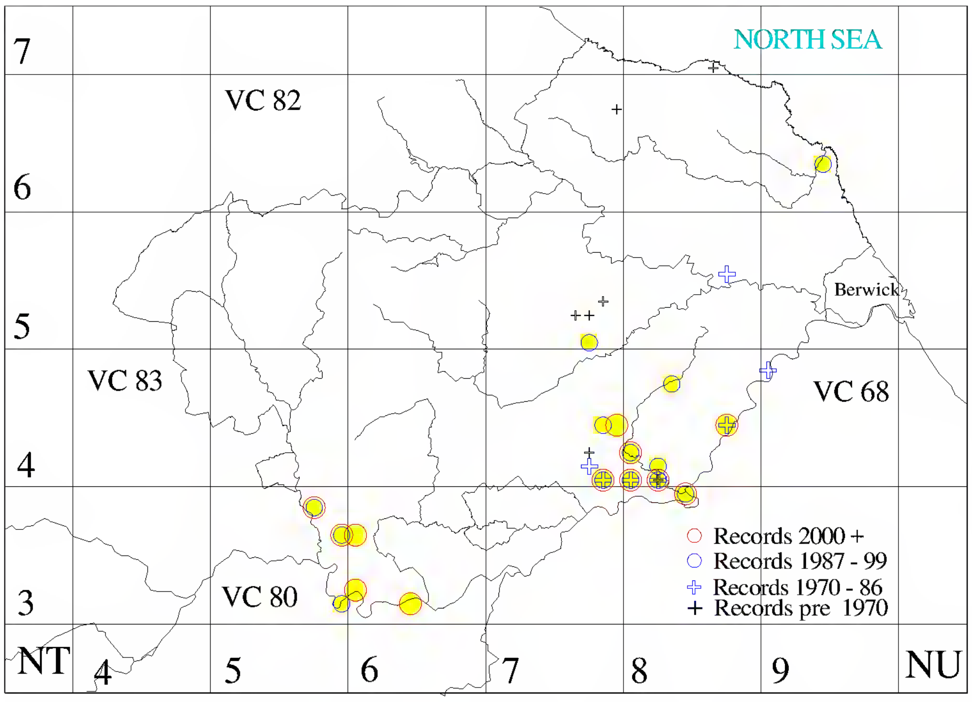
Smyrnium olusatrum was formerly cultivated and is still very widespread as a naturalised plant of cliffs and grassy habitats near the sea near the coast in southern Britain but is rare in the north.

It is now only known in Berwickshire near the shore by Burnmouth 96, where it was seen by the path to Partanhall in 2005.

Solanum dulcamara Bittersweet

Wetland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	4% tetrads	30% hectads
Britain 1987-1999		55% tetrads	64% hectads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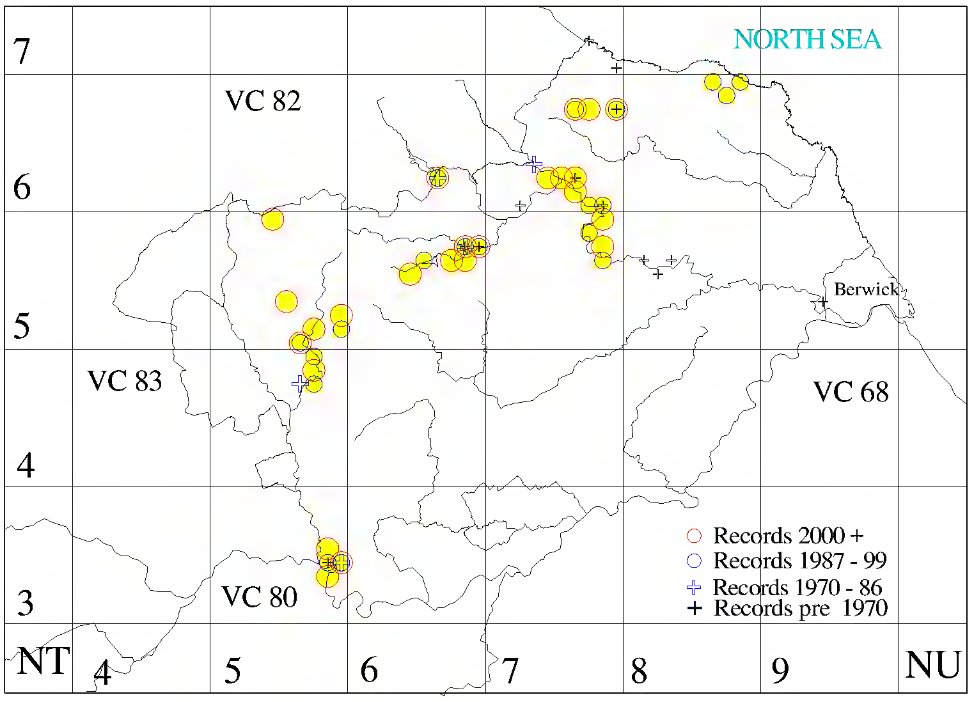
Solanum dulcamara is very widespread in England and Wales but only local in lowland Scotland as far north as the central belt. In Berwickshire it usually grows in fens and riversides but is sometimes found in drier habitats. It is plentiful at Bishops Bog 74, Liththillum Loch 84, Horse Bog 84, Hirsel Lake 84 and more sparsely along the Leet Water corridor. It is also known in Redpath Moss 53 and in a few places by the Leader Water and the River Tweed and near the mouth of the Eye Water 96. This is a curiously restricted distribution that is hard to understand.

It was once known by the Pease Burn 76 and around Duns 75 but has not been seen there recently. This is a species that might well spread, but shows no sign of doing so, rather the reverse.

Solidago virgaurea Goldenrod

Rock, native, selected axiophyte

Berwickshire 1987-2013	3% monads	7% tetrads	35% hectads
Britain 1987-1999		29% tetrads	56% hectads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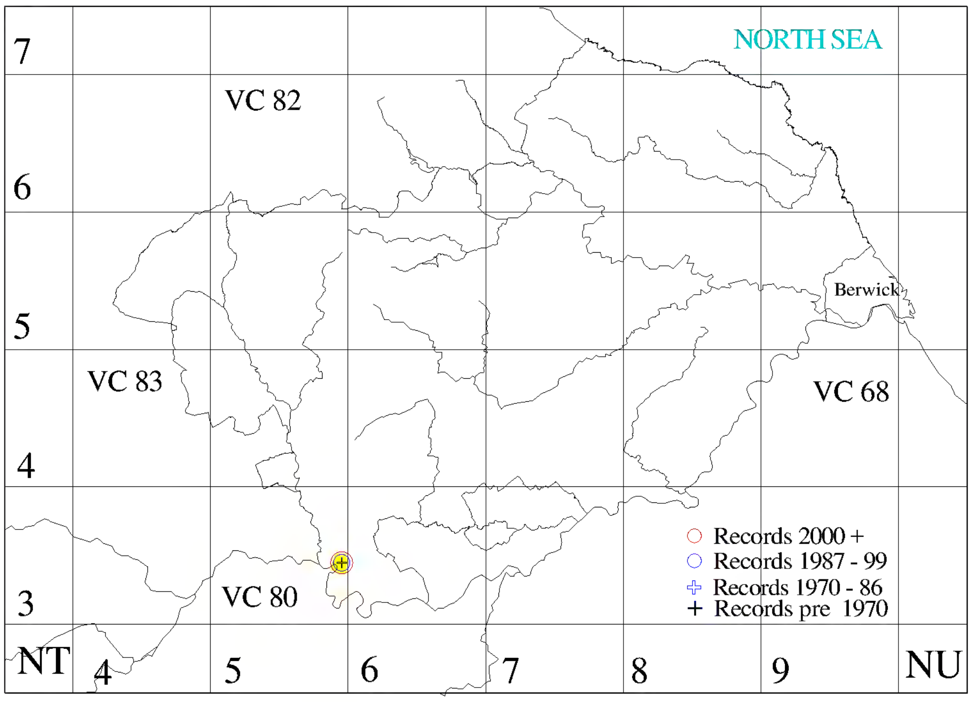
Solidago virgaurea occurs throughout Britain, being widespread and locally plentiful in the west but often scarce in the east. While open heathy habitats are colonised in the west, the Berwickshire records almost all relate to rocky burnsides where it grows around waterfalls and in gullies. The records are markedly clustered and several seemingly suitable hill burns are un-colonised. It is particularly frequent in the oakwoods around Abbey St Bathans 76.

Colonisation of quarries demonstrates that this species has the potential for short-distance colonisation and some such mobility after natural rock falls is likely, but there is no evidence of wider colonisation. Deans near the coast with former colonies have now been severely invaded by *Ulex europaeus* Gorse and it is not known whether the *Solidago* survives. No other possible recent losses are known.

Sorbus rupicola Rock Whitebeam

Woodland, native, rare or scarce, British scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		0.1% tetrads	2% hectads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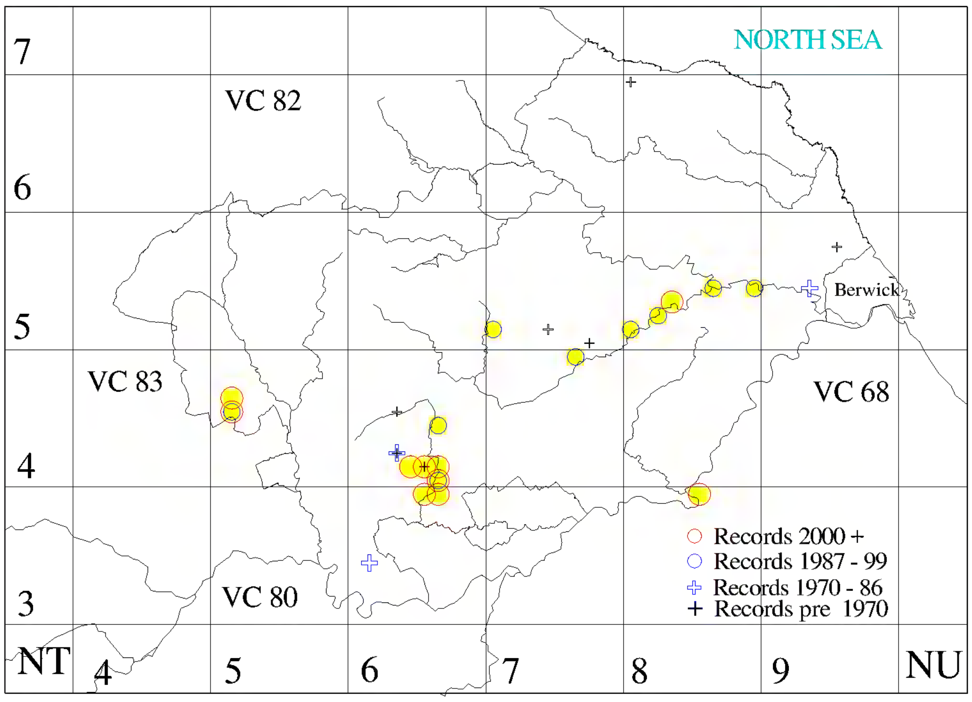
Sorbus rupicola is quite widespread in Britain but is very localised and restricted to calcareous rocks.

Long known in Berwickshire at Gaitheugh 53 where there is are at least twelve trees to 4m high on a distinctive calcareous rock formation at the bend of the river.

Sparganium emersum Unbranched Bur-reed

Aquatic, native, rare or scarce

Berwickshire 1987-2013	8¾+¼ sites	4% tetrads	30% hectads
Britain 1987-1999		9% tetrads	33% hectads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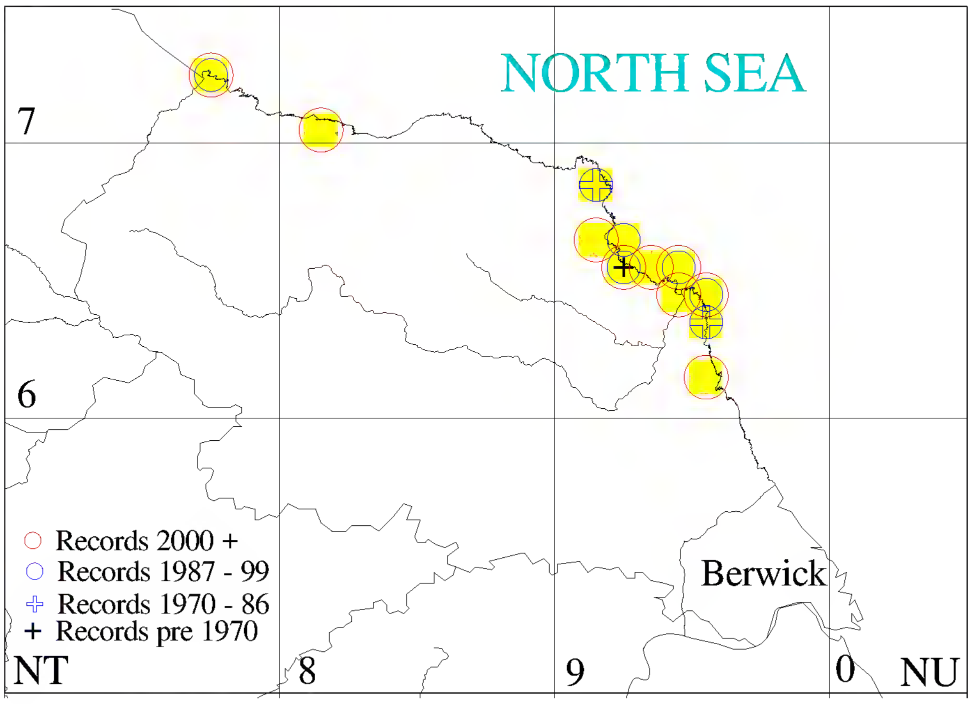
Sparganium emersum is an aquatic plant of slow-moving or still water that is very widespread in southern Britain but more local in Scotland.

It is very local in Berwickshire and seldom flowers. There is modest colony in the upper Lauder Burn 54 over about 400m. There are a series of colonies in a contrasting habitat in the canalised Hareford Burn 64 and the Eden Water 63, 64 over several kilometres. It is very scarce in the Blackadder Water and has only been seen recently near Mouth Bridge 85. There is also an unexpected record from the River Tweed at Lees Haugh 83 where it may well have been casual.

Spergularia media Greater Sea-spurrey

Coast, native, rare or scarce

Berwickshire 1987-2013	7¼ sites	2% tetrads	13% hectads
Britain 1987-1999		8% tetrads	18% hectads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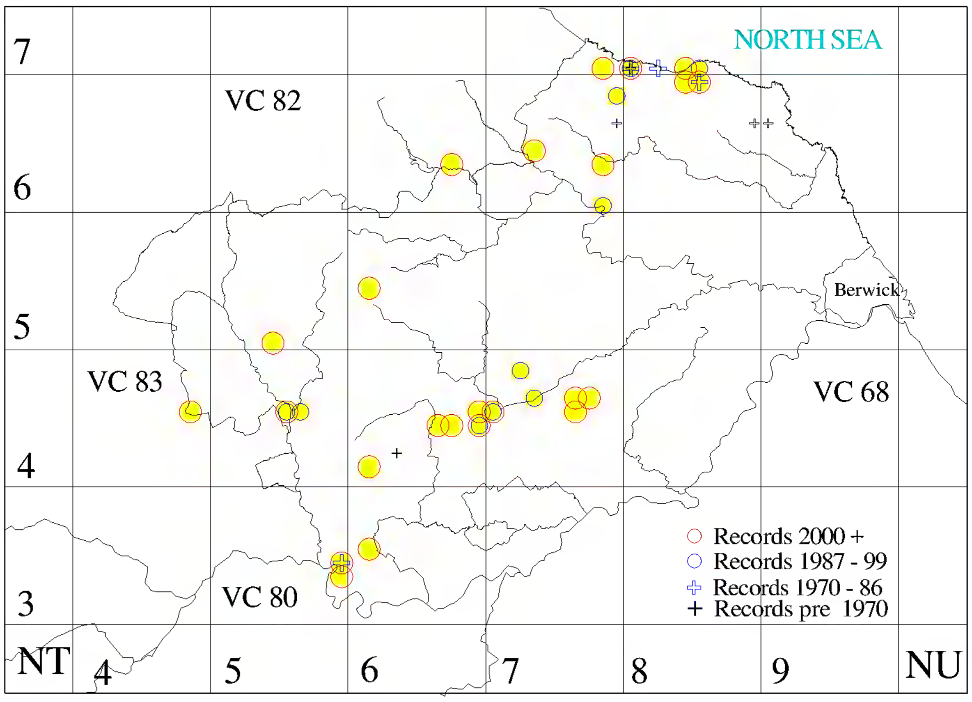
Spergularia media is found almost all round the British coastline in saltmarshes and other maritime habitats.

The limited representation in Berwickshire reflects the very rocky coastline. Some of the records are of casual single plants among rocks or boulder beaches. The well established colonies are at Ramsheugh Bay 77, Yellow Craig 96, Hairy Ness by Eyemouth Fort 96 and on the coast at Gunsgreen 96 usually with other saltmarsh plants.

Spergularia rubra Sand Spurrey

Grassland, native, rare or scarce

Berwickshire 1987-2013	22¾ sites	7% tetrads	57% hectads
Britain 1987-1999		11% tetrads	32% hectads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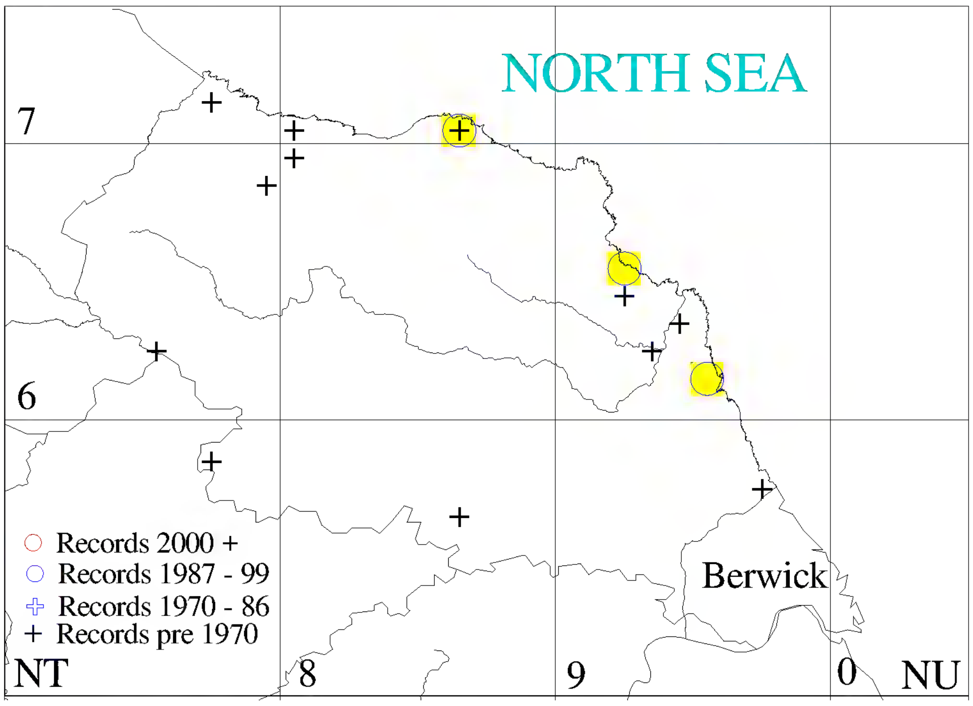
Spergularia rubra grows in sandy and gravelly habitats and is only locally frequent in Britain.

Its natural habitat in Berwickshire is rather acid sandy grassland. This is a rare habitat and substantial colonies are only known from Bemersyde Hill 53, Lumsdaine Dean 86 and in and near Old Cambus Quarry 87. However it has recently colonised an increasingly wide range of ruderal habitats including forestry roads, as in Edgarhope Wood 55 and Harecleugh Forest 65. Other colonies are on the old runways at Charterhall Airfield 74, on the old railway near Gordon 64 and by roads, usually further back from the tarmac than the halophyte *S. marina* Lesser Sea-spurrey, as on Lauder Common 44.

Stachys arvensis Field Woundwort

Arable, archaeophyte, rare or scarce

Berwickshire 1987-2013	¾ sites	0.9% tetrads	9% hectads
Britain 1987-1999		10% tetrads	28% hectads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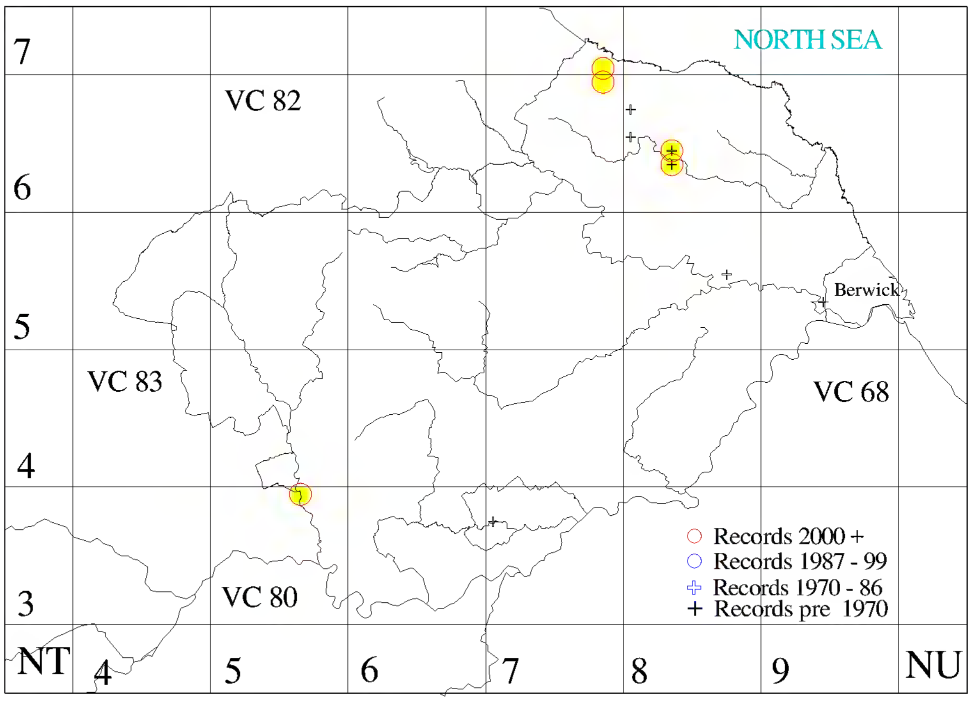
Stachys arvensis is an arable weed that is widespread but declining in southern Britain and scarce in Scotland.

It is now approaching extinction in Berwickshire, but was formerly quite frequent near the coast. The most recent records were all immediately adjacent to the sea braes and were in an arable field near Dowlaw Dean 87 in 1998 before the relevant part of this field was planted with trees, in an arable field near Fleurs Dean 96 in 1994 and in an arable field near Breeches Rock 96 in 1997. It might well reappear from the seed bank in some of these places, or nearby, if cropping was suitable.

Stachys officinalis (Betonica officinalis) Betony

Grassland, native, rare or scarce

Berwickshire 1987-2013	1+3 sites	2% tetrads	17% hectads
Britain 1987-1999		26% tetrads	47% hectads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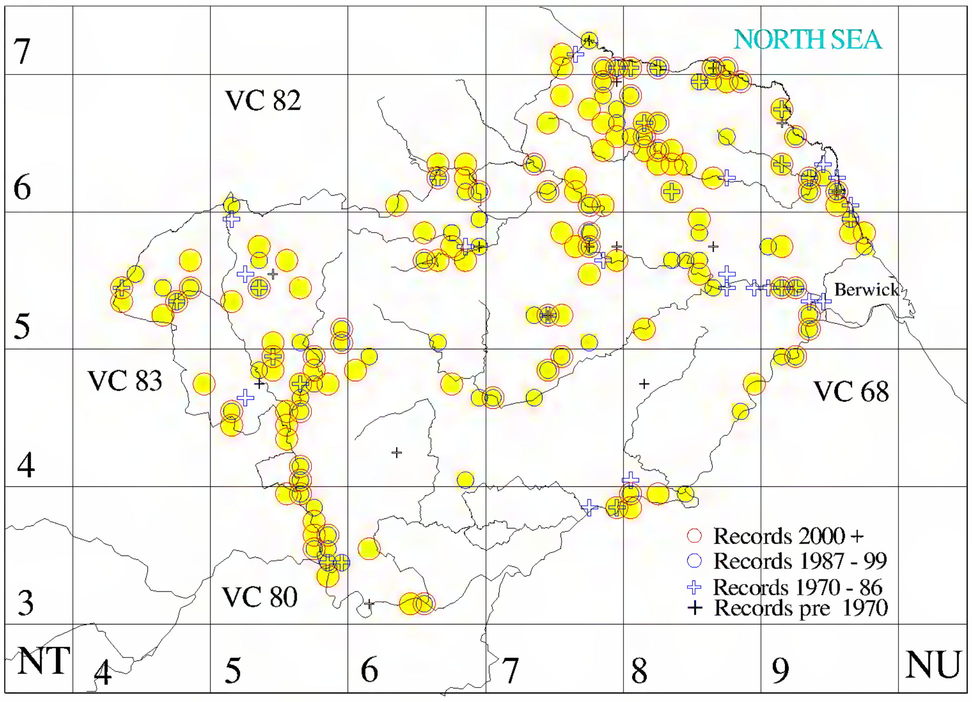
Stachys officinalis is a grassland and woodland edge species that is very widespread in England and Wales but very scarce in Scotland.

It is almost extinct in Berwickshire as a native. It still occurs at Green Wood by Houndwood 96 where it was seen in 2002 in an area recently cleared of trees and in 2011 on a bank by a track just south of the wood. It has recently been sown in quantity on the rocky sides of a cutting constructed for the Cockburnspath bypass 76, 77 on the A1 trunk road and has naturalised well. It has also been sown in a field near Earlston 53 where a few plants were seen in 2013.

Stellaria holostea Greater Stitchwort

Woodland, native, other axiophyte

Berwickshire 1987-2013	14% monads	35% tetrads	100% hectads
Britain 1987-1999		59% tetrads	77% hectads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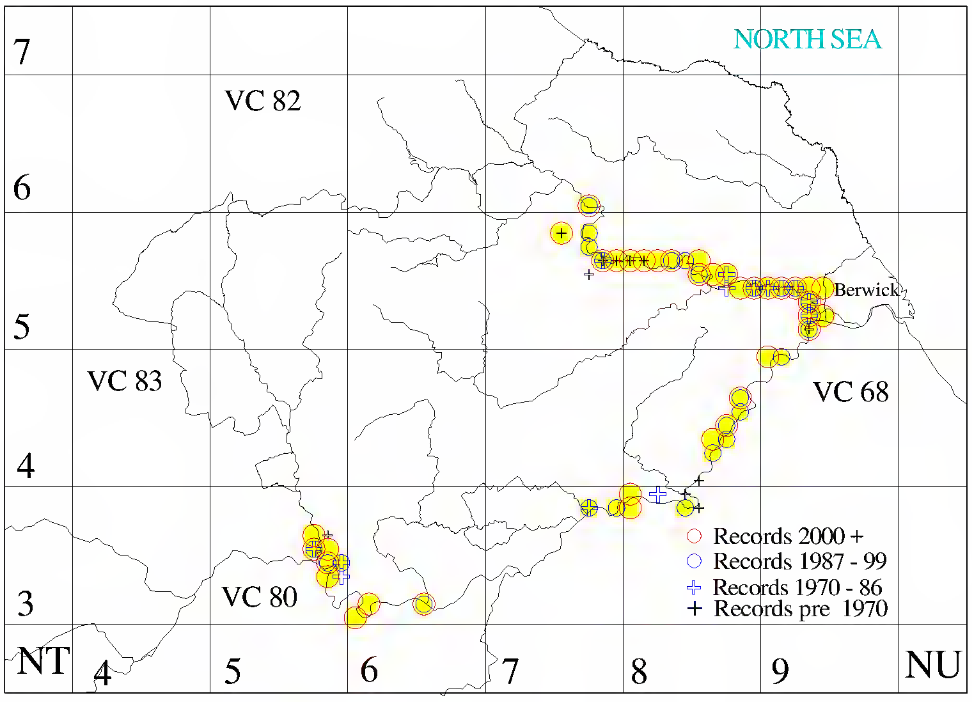
Stellaria holostea is a very widespread woodland or woodland-edge plant in Britain that can thrive on more acidic soils than many woodland plants. In lowland Berwickshire it is found in all the main woodlands and is also frequent on the coast, under bracken and in gullies. But this species is more typically upland in the county, being plentiful in the Abbey St Bathans oakwoods 76 and continuing into the moorland of the Lammermuirs along the burnsides where it is associated with scraps of birchwood and bracken.

There is a weak suggestion from the data of a progressive decline in the lowlands, especially along the Blackadder and lower Whiteadder Waters. Here the combined effects of Dutch elm disease and eutrophication have led to a decline in the more open acidic habitat under mature trees formerly favoured by this species. There is no evidence of recent colonisation.

Stellaria nemorum Wood Stitchwort

Woodland, native, Berwickshire fine

Berwickshire 1987-2013	4% monads	9% tetrads	43% hectads
Britain 1987-1999		3% tetrads	11% hectads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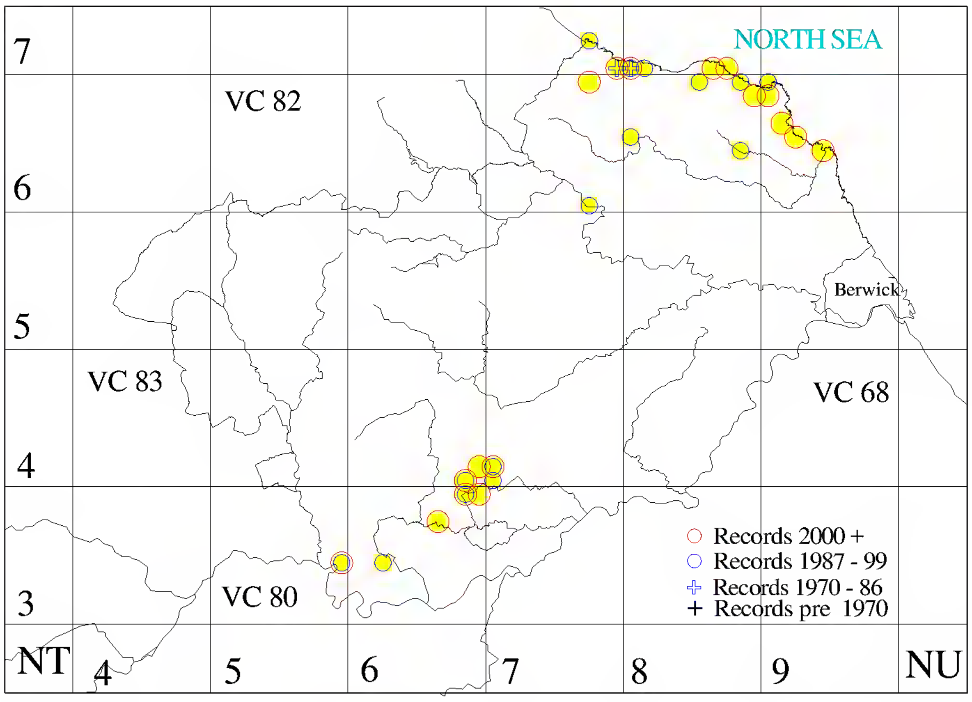
Stellaria nemorum is restricted in Britain to northern England and southern Scotland where it is rather local. It is a plant of wet woods and riversides. It is plentiful in Berwickshire within its restricted range following the River Tweed and much of the Whiteadder Water. It is found for only a short distance up the Leader Water. The strictly riverside distribution suggests that this species is largely dispersed vegetatively, being found more or less continuously along the riverside but prospering best under woodland. The Leader Water population has its upper limit in a flush well up a small side burn near Redpath village 53, where it may have been introduced accidentally by man or animals, possibly long ago.

This species appears to be freely dispersed by floods but there is no evidence of recent decline or spread.

Stellaria pallida Lesser Chickweed

Grassland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	5% tetrads	39% hectads
Britain 1987-1999		4% tetrads	15% hectads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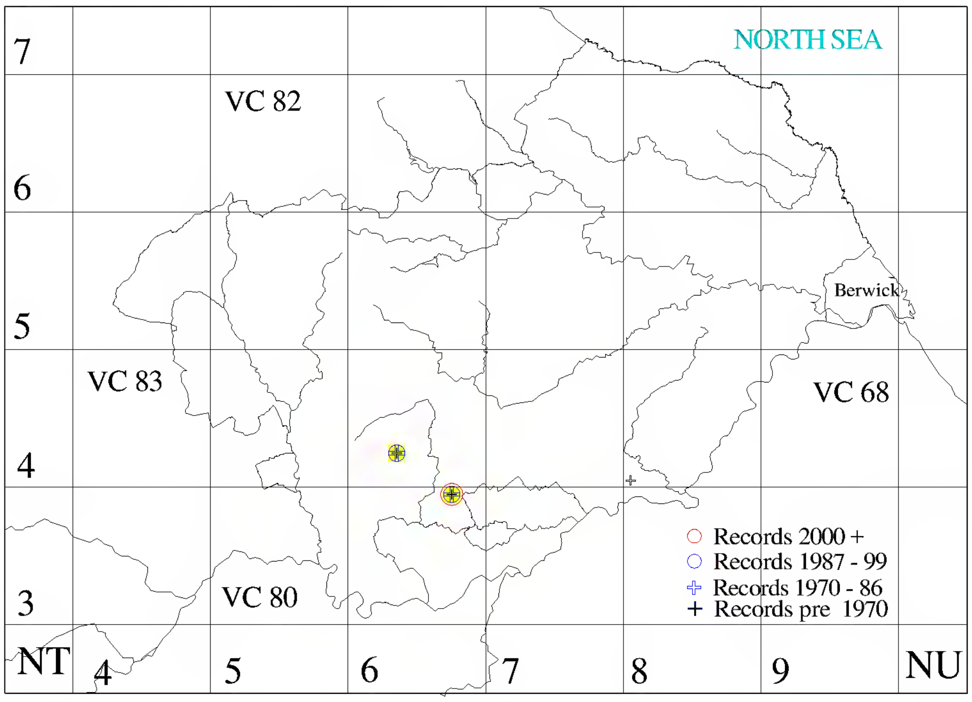
Stellaria pallida is sparsely distributed in Britain. In Scotland it is mainly coastal, so the inland Berwickshire populations on the volcanic rocks of the Kelso Traps are notable. This is a very early-flowering annual usually found on rocky knowes that become droughted in summer. The coastal colonies are on the Silurian: it is absent from the Old Red Sandstone. It is also plentiful around the beach huts on Coldingham Sands 96 and has occasionally been found as a roadside casual. In its most typical rocky grassland habitat it is often almost the last survivor of a formerly rich grassland flora in fields that have lost their diversity due to eutrophication and herbicides.

The 2000-13 survey has revealed many new populations, some of them large, but these have been found as the result of dedicated intensive survey early in the season. Apart from a few casuals, there is not thought to have been any recent colonisation, though the species is probably mobile within a site and population size varies from season to season in response to weather patterns.

Stellaria palustris Marsh Stitchwort

Wetland, native, rare or scarce

Berwickshire 1987-2013	1 site	0.6% tetrads	9% hectads
Britain 1987-1999		0.6% tetrads	6% hectads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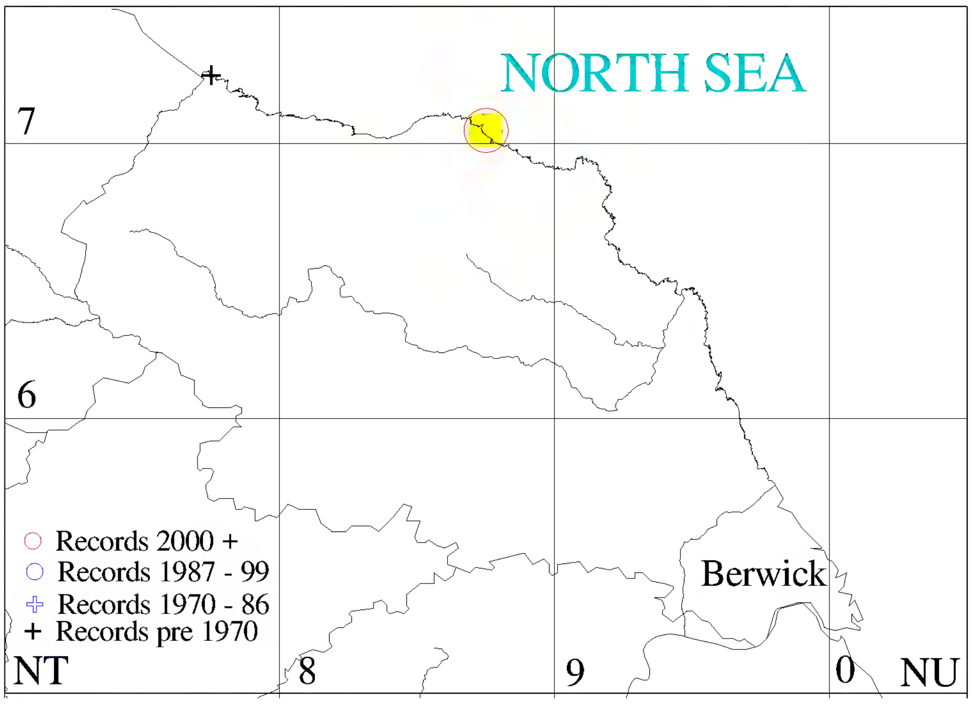
Stellaria palustris is a localised British plant of fens, especially those with open standing water. It is most frequent in East Anglia and is scarce in Scotland.

It has only ever been known in Berwickshire at three sites. It has long been lost from Lithtillum Loch 84 and is now considered extinct at Gordon Moss 64, where it was last seen in 1993. However the Lurgie Loch 63 colonies have so far proved surprisingly resilient in the face of the loss of open water habitat and its conversion to fen and carr woodland.

Suaeda maritima Annual Sea-blite

Coast, coastal casual, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		3% tetrads	13% hectads



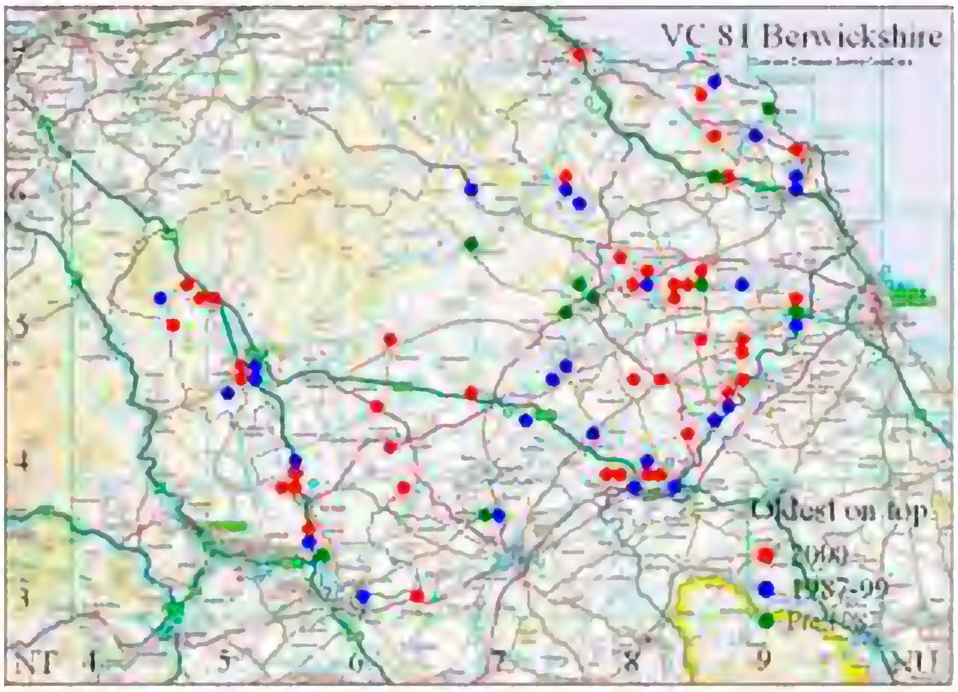
Suaeda maritima is widely distributed round the British coast in saltmarsh and the wetter part of beaches.

It has only twice been recorded in Berwickshire, most recently in 2011 as a single casual plant on the beach below Brander Heugh 87.

Symphoricarpos albus Snowberry

Woodland, neophyte, intrusive neophyte

Berwickshire 1987-2013	6% monads	18% tetrads	83% hectads
Britain 1987-1999		43% tetrads	66% hectads



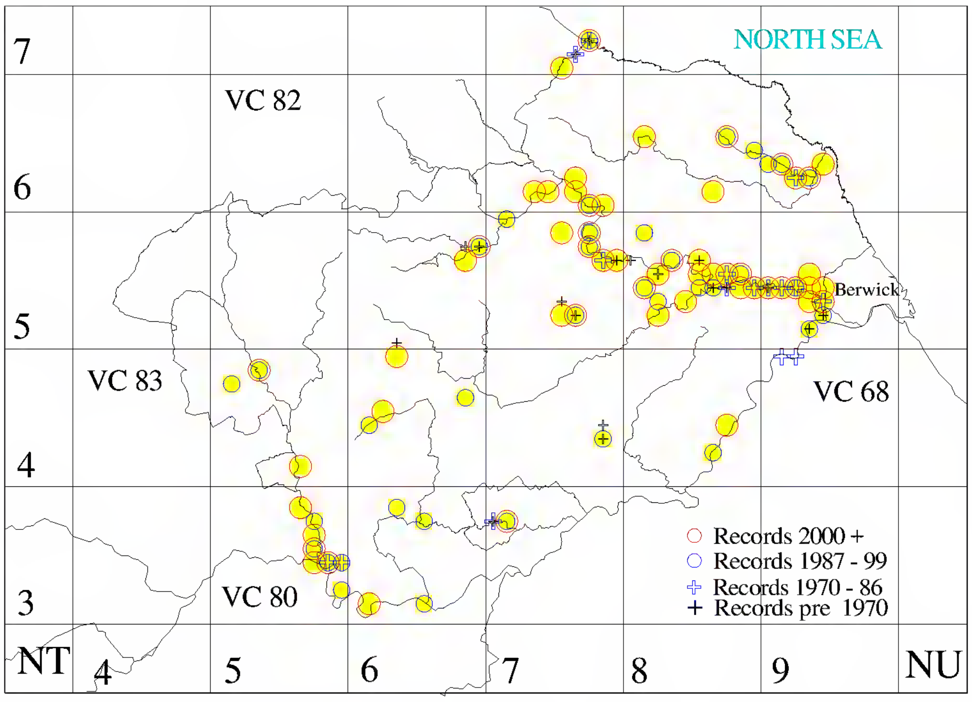
Symphoricarpos albus has been very widely introduced to woodland and is sometimes used for hedging, though that is a mistake as it suckers strongly. The woodland introductions form large patches to the detriment of the native flora but are helpful on pheasant shoots as they can be used as flushing points. Root fragments are sometimes carried down rivers to establish new colonies, though this happens relatively infrequently. Seedlings occur rarely on wall tops, but some plants appearing on the top of tall walls have in fact suckered up through a central cavity and are likely to lead to a collapse. It is something of a mystery why those conservationists who are so intolerant of *Fallopia japonica* Japanese Knotweed are tolerant of this shrub, which is arguably more destructive. Some admire the white fruits, but they are not attractive to birds.

It has only been recorded systematically in the more recent surveys, so no trends can be inferred from the map.

Symphytum tuberosum Tuberous Comfrey

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	9% monads	23% tetrads	87% hectads
Britain 1987-1999		38% tetrads	61% hectads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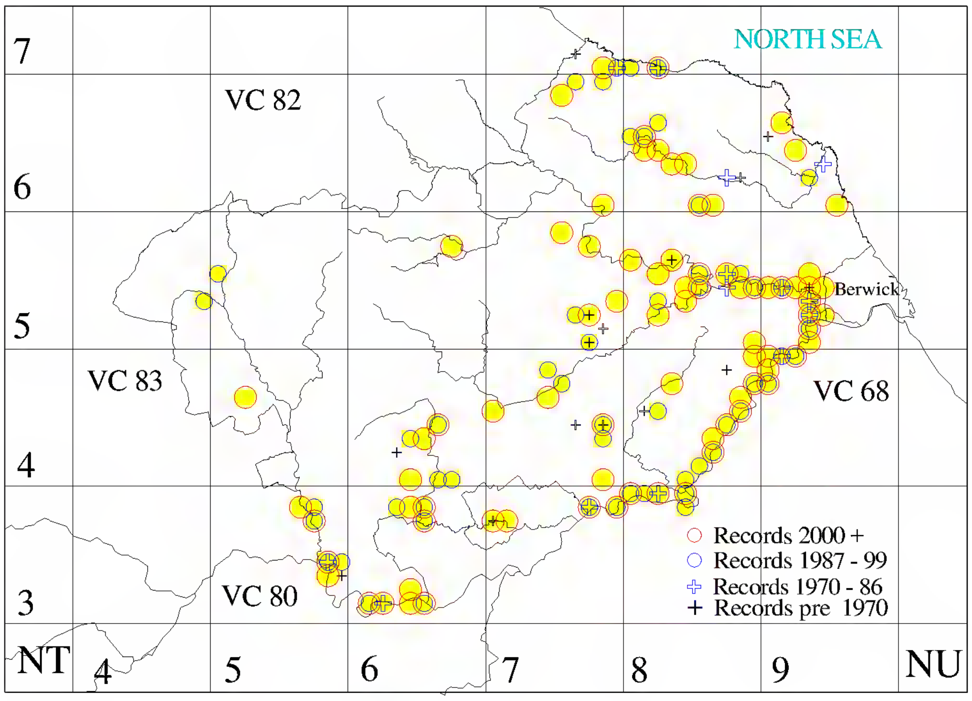
Symphytum tuberosum is very plentiful in much of eastern Scotland but scarce across the remainder of Britain. Contrary to what is written in most recent Floras, there seems to be good evidence that it is an introduction throughout Britain. The Berwickshire record is typical of that in eastern Scotland as a whole, the early records are sparse and the species was regarded as unusual. Today this species is almost ubiquitous along the Whiteadder Water, with a preference for sandy alluvium on the flood plain, and is now becoming so along the lower Leader Water and the Ale Water. It is scarce by the Tweed itself and absent from a number of its tributaries. Away from the river bank it is most often found near old walled gardens, suggesting introduction as a herb, probably as a substitute for *S. officinale* Common Comfrey which had a wide range of herbal uses. In Scotland, unlike England, *S. officinale* is rare or absent as a native, though occasionally introduced.

S. tuberosum blends in well with the native flora, despite its increasing abundance.

Symphytum x uplandicum = *S. asperum x officinale* Russian Comfrey

Riverside, neophyte, prominent neophyte

Berwickshire 1987-2013	6% monads	17% tetrads	65% hectads
Britain 1987-1999		6% tetrads	16% hectads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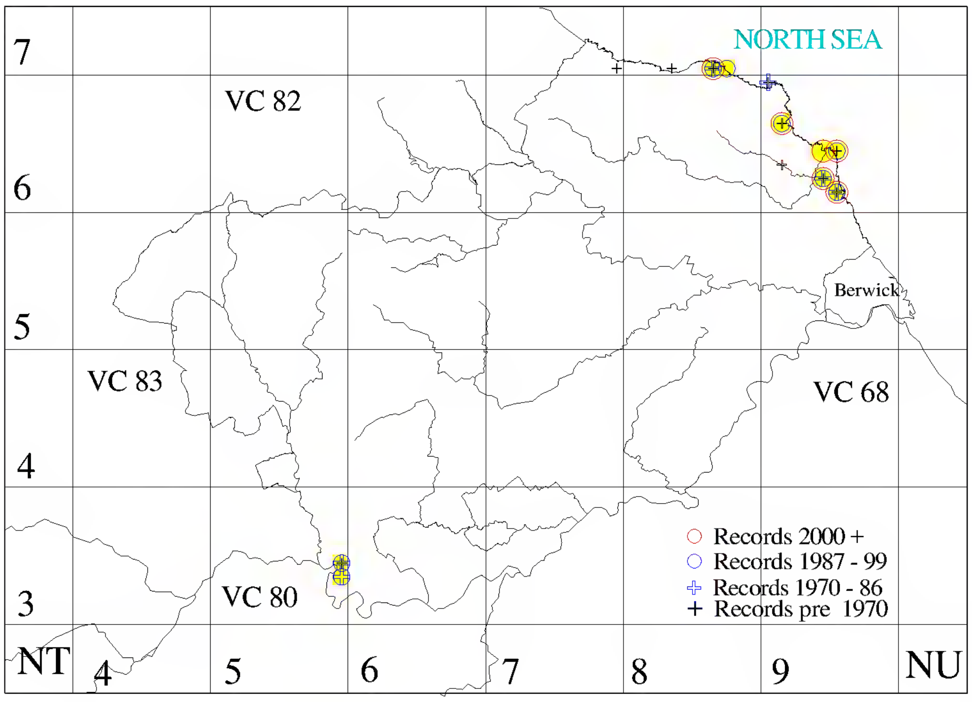
Introduced in 1870 as a forage plant, *Symphytum x uplandicum* has become very widespread in lowland Britain. In Berwickshire it is mainly a riverside plant, often forming large stands. It is fully fertile, despite its hybrid origin. It is also found in roadside verges and on waste ground. It is usually predominantly blue of various shades, but pink in bud. There are three records away from the rivers for a purple-flowered form which may have the chromosome number 2n=36. It is still increasing.

Thalictrum minus Lesser Meadow-rue

Coast, native, rare or scarce

Berwickshire 1987-2013	7 sites	2% tetrads	13% hectads
Britain 1987-1999		3% tetrads	19% hectads



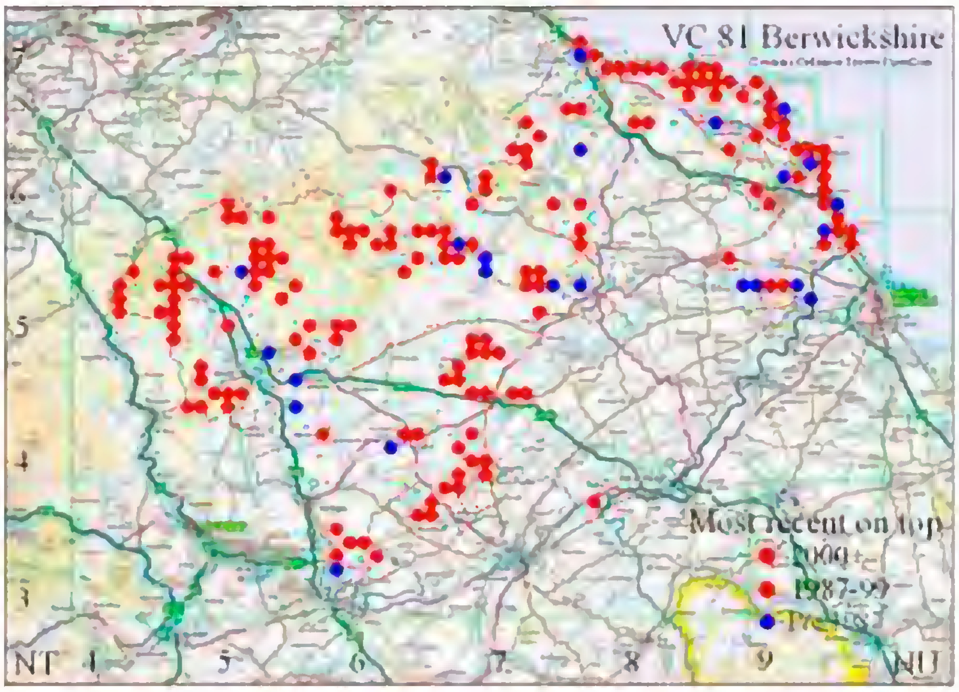
Thalictrum minus is relatively widespread but rather local in Britain. It grows in sandy habitats and on calcareous rocks. It is most frequent on the coast.

It is modestly represented in Berwickshire. The back of the beach at Coldingham Bay 96 is the only site where it grows on sand. Elsewhere on the coast it is found on rocky sea braes at Gunsgreen 96, north of Burnmouth 96 and in Dowlaw Dean 87 with *Sedum rosea* Roseroot. It also grows on a bank opposite the junction of the Ale and Eye Waters 96 with *Astragalus glycyphyllos* Wild Liquorice and on riverside rocks at Gaitheugh 53.

Thymus polytrichus Wild Thyme

Grassland, native, other axiophyte

Berwickshire 1987-2013	14% monads	31% tetrads	87% hectads
Britain 1987-1999		38% tetrads	68% hectads



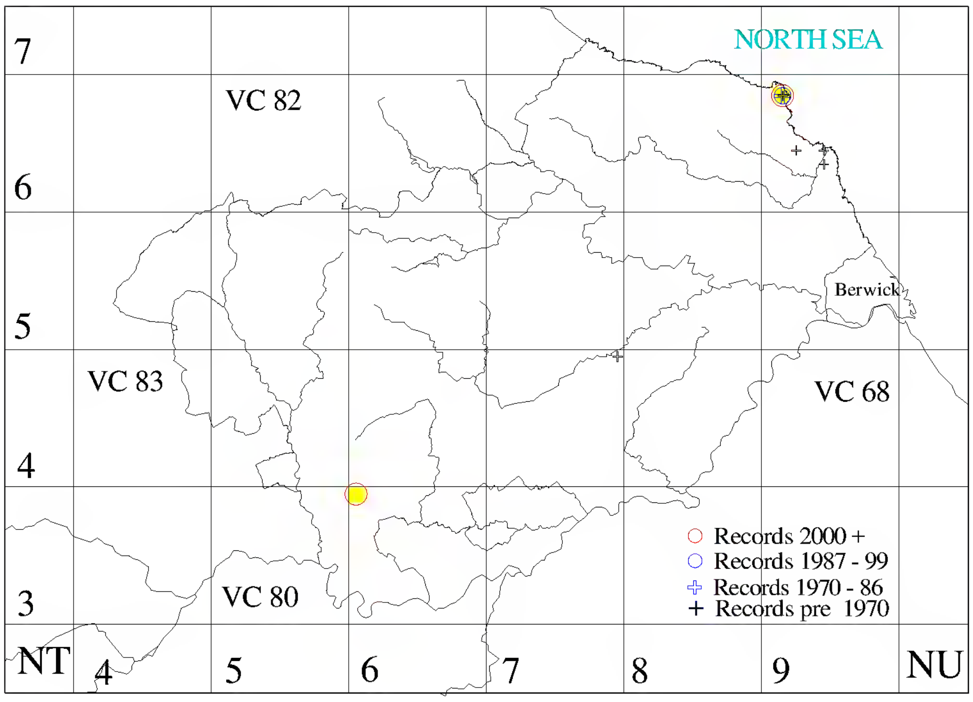
Thymus polytrichus is almost ubiquitous at 10km scale in Scotland but less so in England where it is mainly found on the chalk and limestone. In Scotland it is plentiful in hill grassland wherever the soil reaction is less acidic than that of typical heather moorland. The Silurian rocks which underlie much of the hill vegetation of Berwickshire have many suitable strata so *T. polytrichus* is very widespread up the Lammermuir burns. It is equally at home on the Old Red Sandstone of the upper Blackadder Water and on the intrusive rocks of the Kelso Traps. It is found along the whole length of the Berwickshire coast on a variety of substrates, both on the sea braes and on rocky knowes in the fields above. Overall it is an excellent indicator of the drier types of grassland of any botanical interest.

The map shows no evidence of decline but the apparent spread is evidence of the more complete coverage of the 2000-13 survey. *T. polytrichus* has colonised recently constructed forestry tracks, but these are all in areas where it was already present.

Torilis nodosa Knotted Hedge-parsley

Grassland, native, rare or scarce

Berwickshire 1987-2013	1½ sites	0.6% tetrads	9% hectads
Britain 1987-1999		4% tetrads	14% hectads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Torilis nodosa is an annual of dry grassland that is local in south and south-east England and rare in Scotland.

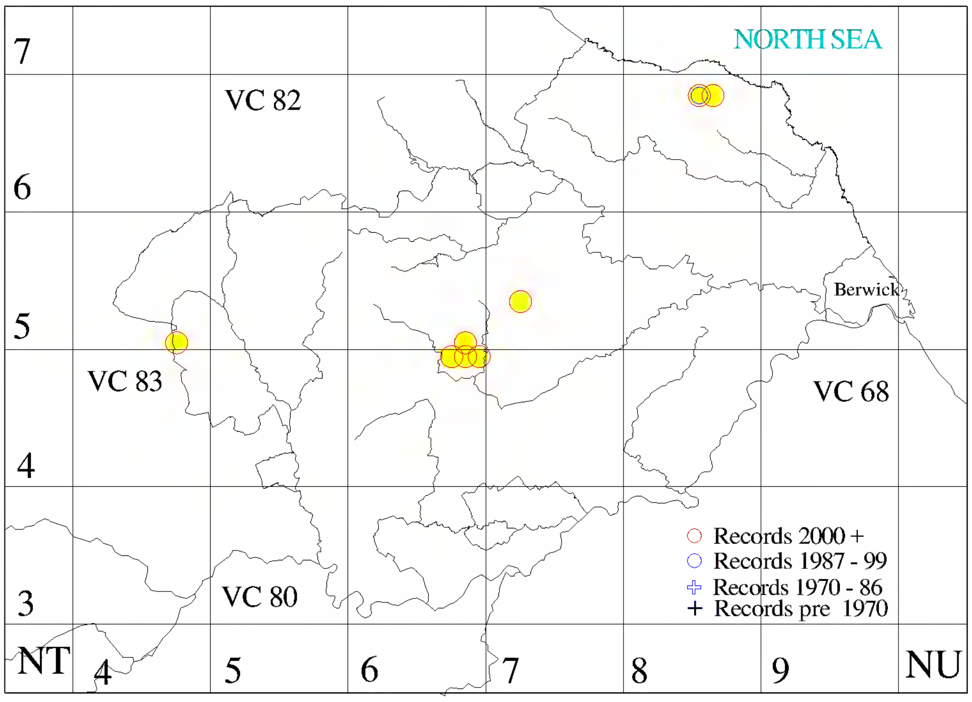
It has always been rare in Berwickshire. There is still a tiny colony on the inland side of Kirk Hill at St Abbs Head 96 where it grows in loose stony material in two small gullies. Unfortunately this area has been invaded by *Sedum album* White Stonecrop and the *Torilis* is unlikely to survive much longer.

In 2000 one unexpected plant was found near Purvishaugh 63, where it had colonised from is a mystery.

Trichophorum cespitosum nothosubsp. foersteri = T. c. subsp. cespitosum x subsp. germanicum (T. x foersteri = T. cespitosum x germanicum) Swan's Deergrass

Moorland, native, rare or scarce

Berwickshire 1987-2013	6 sites	2% tetrads	22% hectads
Britain 1987-1999		1% tetrads	5% hectads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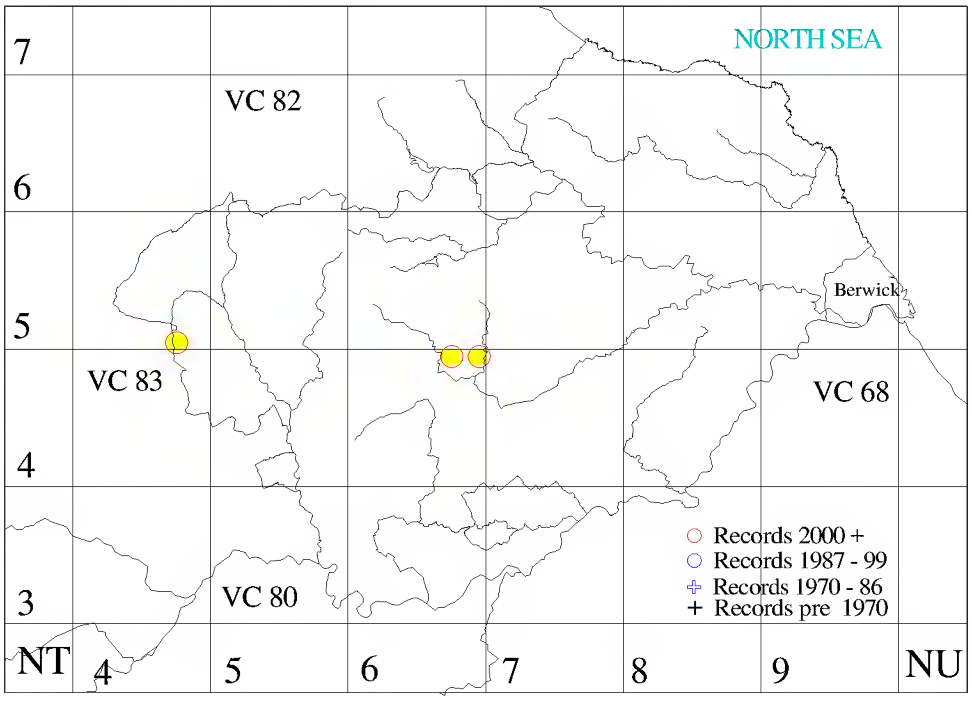
Trichophorum cespitosum nothosubsp. foersteri is a largely sterile hybrid between *subsp. cespitosum* and *subsp. germanicum.* It has only been recognised in Britain since 1999 but is now known to be rather widespread in its very specific habitat of active raised bogs where it often forms large populations. That habitat is usually too acid to support *subsp. cespitosum* and too wet to support *subsp. germanicum.*

This hybrid is quite well represented in Berwickshire. It is found across the whole of Dogden Moss 64 and is present at Longmuir Moss 45 and Long Moss 96. A few isolated small clumps were found on shallow peat at Henlaw Bogs 75. It is sometimes proliferous on Dogden Moss. One large clump found on Dogden Moss was suspected to be the backcross with *subsp. cespitosum.*

Trichophorum cespitosum subsp. cespitosum (T. cespitosum) Lesser Deergrass

Moorland, native, rare or scarce, British rare

Berwickshire 1987-2013	3 sites	0.9% tetrads	9% hectads
Britain 1987-1999		0.02% tetrads	0.2% hectads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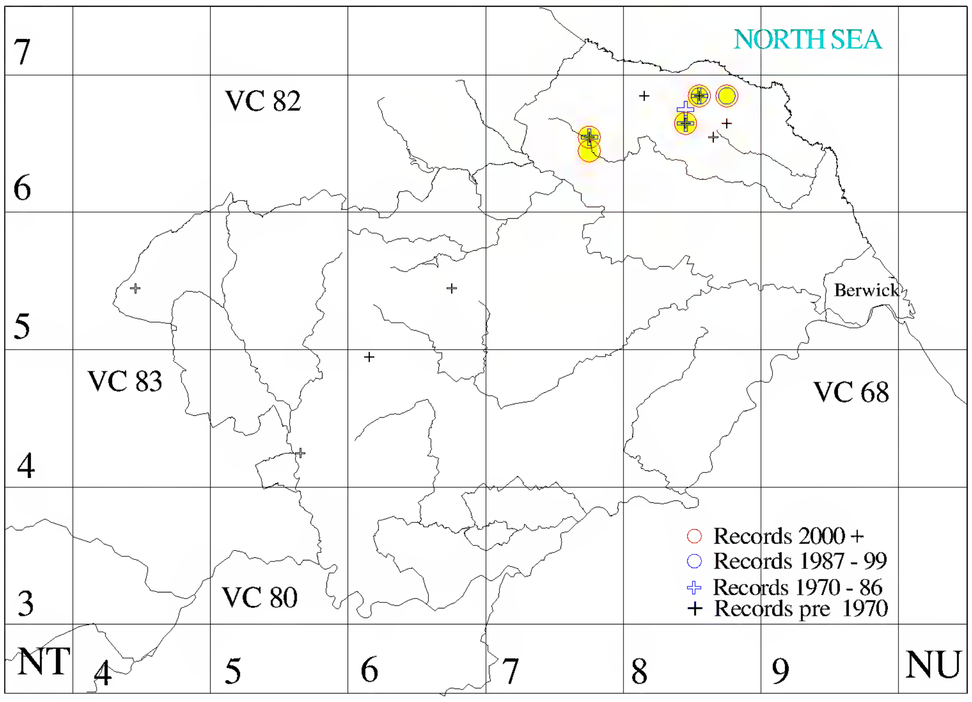
Trichophorum cespitosum subsp. cespitosum is found in peaty flushes that are slightly base-enriched, sometimes in species-poor communities within a raised bog, sometimes in more species-rich flushes. It is rare in Britain, but under-recorded except in Northumberland where G A Swan discovered a number of sites. This taxon is now recognised as a full species.

It has been found in both of the two most likely sites in Berwickshire. At Dogden Moss 64 there is quite a sizable colony over 200m towards the east end of the moss in slightly flushed depressions in the bog surface and a small colony at the western end. At Longmuir Moss 45 it grows in fair numbers in channels in the *Sphagnum* in the transition zone between fen and raised bog in loose association with *Salix phylicifolia* and *Narthecium ossifragum*. The Longmuir Moss colony is partly in Berwickshire and partly in Midlothian.

Trientalis europaea Chickweed-wintergreen

Wetland, native, rare or scarce

Berwickshire 1987-2013	4 sites	1% tetrads	9% hectads
Britain 1987-1999		9% tetrads	13% hectads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Trientalis europaea is plentiful in birch and pine woods in northeast Scotland but very local elsewhere.

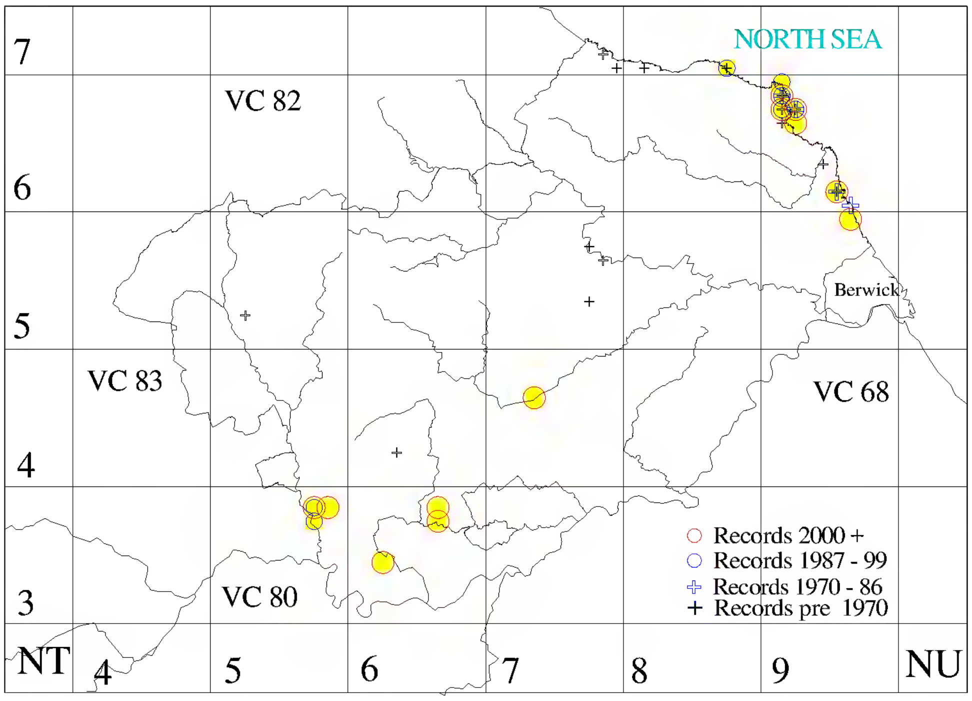
It is modestly represented in Berwickshire. There is a good colony in Long Moss 86 at the north edge of the raised moss and in some adjacent flushes and a small colony at the edge of the raised bog at Drone Moss 86. The other sites are but pathetic remnants: there is a colony for 200m along a forestry ride under electricity pylons on Lumsdaine Moor 86 and two small patches in Butterdean Wood 76 under pine and beech.

The other scattered historical localities are all feared lost.

Trifolium arvense Hare's-foot Clover

Grassland, native, rare or scarce

Berwickshire 1987-2013	9¼+1¼ sites	3% tetrads	26% hectads
Britain 1987-1999		8% tetrads	30% hectads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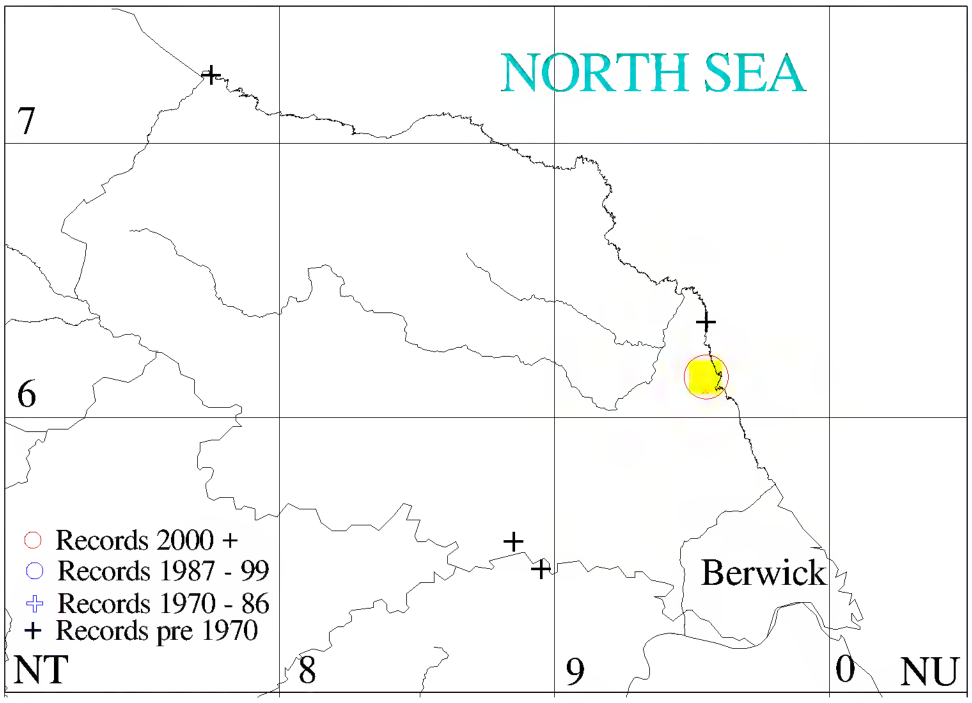
Trifolium arvense is a plant of sandy places and rocky knowes and also of ruderal habitats that is fairly widespread but rather local in lowland Britain and scarcer in the north.

It is modestly represented in Berwickshire. It is most plentiful at St Abbs Head 96 where numbers vary dramatically from year to year. In 2005 it was recorded in plenty on inaccessible cliffs near White Heugh, but it was not evident there in 2006. It is also known in small numbers on the undercliff down to Eelicar Rock and on ledges on the inland side of Kirk Hill. Elsewhere on the coast it is on the cliffs just south of St Abbs village 96, on the braes north of Burnmouth 96 and at Hilton Bay 95. Inland it is on the intrusive rocks at Butchercote Craigs 63, Muckle Thairn 63, Girrick 63 and near Lintmill Bridge 74. It occurs in Earlston 53 near the old railway. Some of the former sites were on ballast associated with the old railway.

Trifolium fragiferum Strawberry Clover

Coast, native, rare or scarce

Berwickshire 1987-2013	1 site	0.3% tetrads	4% hectads
Britain 1987-1999		4% tetrads	16% hectads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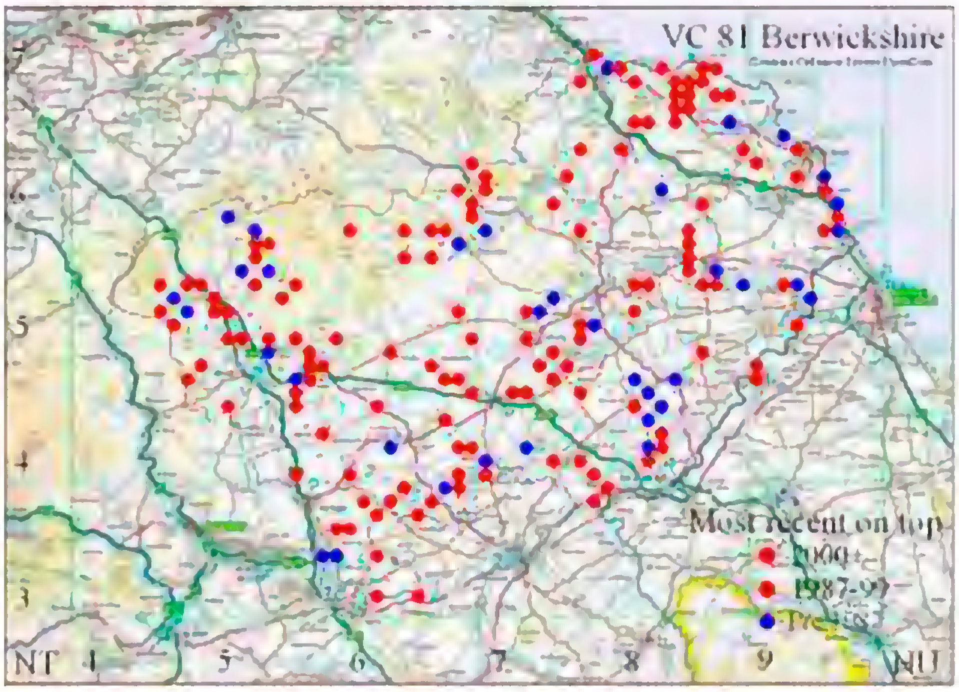
Trifolium fragiferum grows in damp habitats on the coast or inland in calcareous grassland. It is rather local in south and east England and rare in Scotland.

The only recent Berwickshire record was in 2010 at the back of the boulder beach below the sea braes north of Burnmouth 96, where it could be casual. It was formerly known on haughs by the Whiteadder Water 85 as well as on the coast.

Trifolium medium Zigzag Clover

Grassland, native, other axiophyte

Berwickshire 1987-2013	12% monads	32% tetrads	91% hectads
Britain 1987-1999		27% tetrads	55% hectads



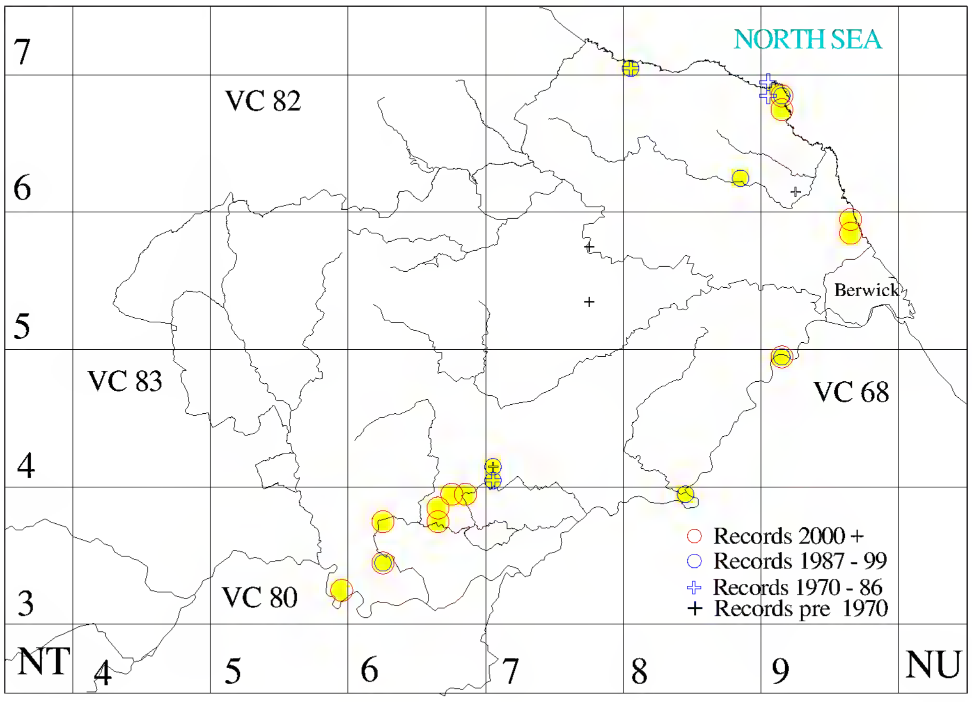
Trifolium medium is a widespread herb of neutral soils. Its Berwickshire distribution is unusual in that it is very widespread in both uplands and lowlands but is never more than a minor component in the vegetation and is infrequent in many areas. It is most typical of species-rich grassland on poorly-drained soils as near Lumsdaine Dean 86 and Redpath Moss 53. This is a vegetation type that is now scarce as it is capable of agricultural improvement. Nevertheless there are many small colonies up the hill burns and in a contrasting habitat along road verges in the lowlands. It is absent from the sea braes.

This species is now so much better recorded than in the past that any decline is obscured. There is no evidence of recent colonisation.

Trifolium striatum Knotted Clover

Grassland, native, rare or scarce

Berwickshire 1987-2013	16¼ sites	4% tetrads	39% hectads
Britain 1987-1999		4% tetrads	19% hectads



Trifolium striatum is an annual most typical of rocky grassland. It is local and southern in Britain.

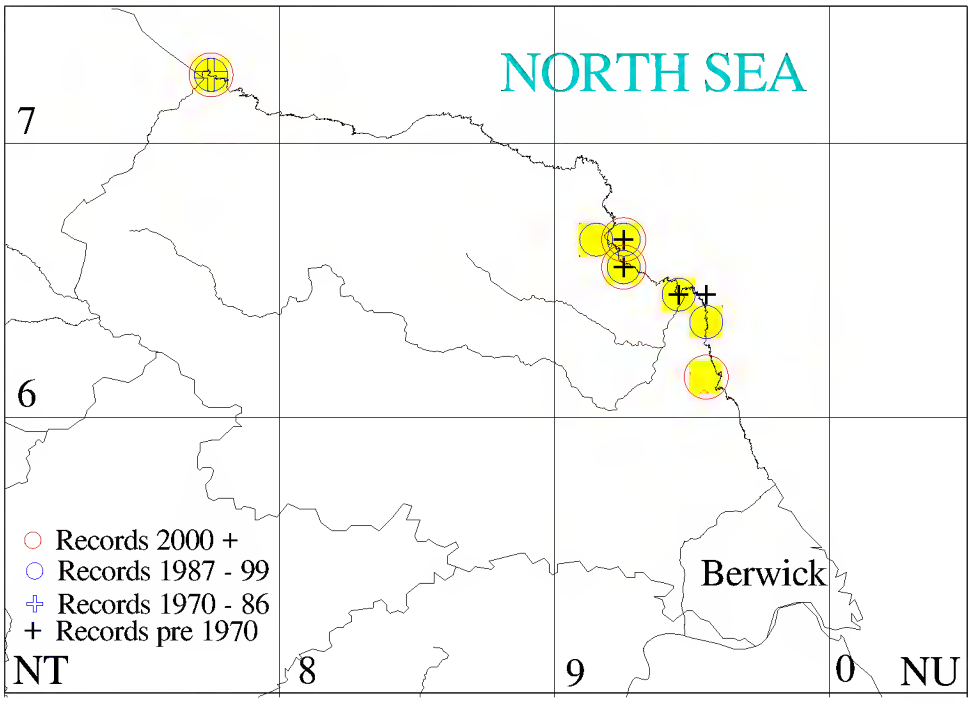
It is moderately well represented in Berwickshire and a characteristic but scarce component of the coastal grasslands and those of the Kelso traps. At St Abbs Head 96 it is scarce on the knowes at the foot of Mire Loch, in the screes on Kirk Hill and on the road to the Lighthouse near Northfield. It has been found elsewhere on the coast only at and near Hilton Bay 95. Inland it is at Butchercote Craigs 63, Muckle Thairn 63, Girrick 63, Hareheugh Craigs 63 and on the riverside below Fishwick Mains 94.

T. striatum is at risk from unfavourable grassland managment at many of its sites.

Triglochin maritimum (T. maritima) Sea Arrowgrass

Coast, native, rare or scarce

Berwickshire 1987-2013	4½ sites	2% tetrads	9% hectads
Britain 1987-1999		7% tetrads	24% hectads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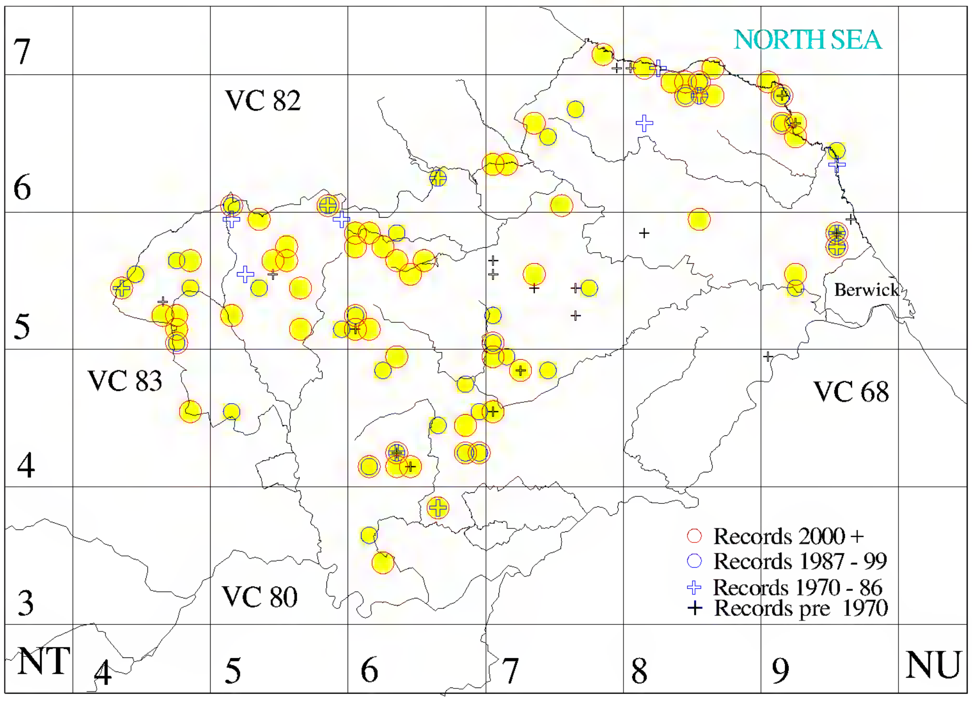
Triglochin maritimum grows all round the coast of Britain in saltmarsh and on flushed coastal rocks.

It is very poorly represented in Berwickshire due to the lack of saltmarsh. There are colonies at Ramsheugh Bay 77, Yellow Craig 96 and at the foot of the sea braes north of Burnmouth 96. It has also occurred fairly recently on the coast at Eyemouth 96.

Triglochin palustre (T. palustris) Marsh Arrowgrass

Wetland, native, other axiophyte

Berwickshire 1987-2013	7% monads	19% tetrads	78% hectads
Britain 1987-1999		28% tetrads	57% hectads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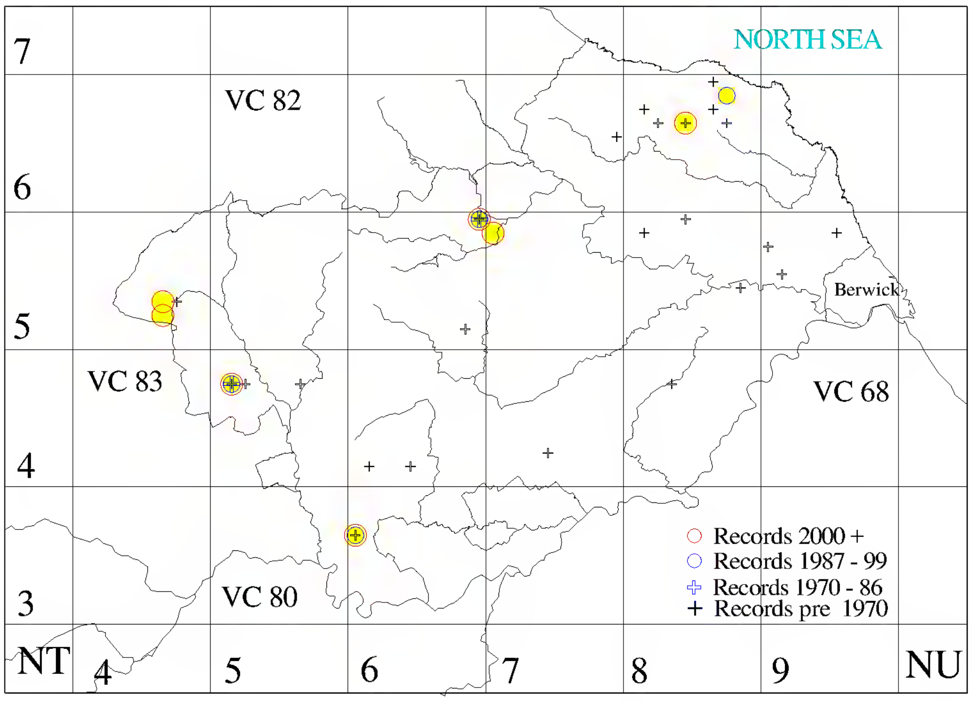
Triglochin palustre is widespread but somewhat local in Scotland and northern England but local further south. It grows in flushes that are at least slightly base-rich and in some shallow fens and marshes. It is local in Berwickshire, but less so than most of the specialist flush species. It occurs in wet places on the coast, sometimes in association with *T. maritimum* Sea Arrowgrass.

There is a suggestion of decline in the distribution map, and this is likely to be the reality. It is not safe to try to identify individual losses as this species is often present in small quantity only, when it is easily overlooked. Rather unexpectedly, there are as yet no records from forestry tracks and ditches or indeed by the main roads, all habitats where it might colonise.

Trollius europaeus Globeflower

Wetland, native, rare or scarce

Berwickshire 1987-2013	5 sites	2% tetrads	26% hectads
Britain 1987-1999		7% tetrads	19% hectads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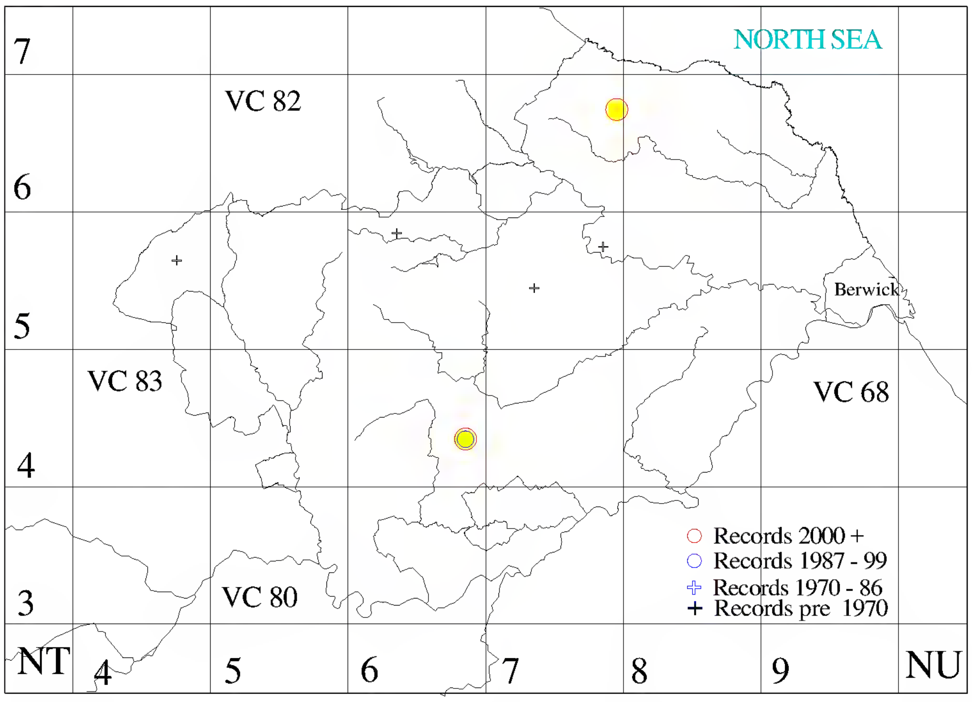
Trollius europaeus is widespread but local in the hills of northern England and Scotland in wet basic grassland and flushes and on rocky riversides.

Now poorly represented and vulnerable in Berwickshire, this is a species that was once quite widespread and characteristic of Berwickshire's wet meadows. There is a series of fine colonies along a very wet bank by the Crook Burn near Longformacus 65, 75, a reasonable colony on a wet bank adjacent to Drone Moss 86 where it is threatened by the spread of *Rhododendron*, a small colony in a tiny wet meadow on the east side of Redpath Moss 63, a few plants in poor habitat by the Washing Burn 54 and a colony in one of a series of species-rich flushes above Threeburnford Cleugh 45.

Ulex gallii Western Gorse

Moorland, native, rare or scarce

Berwickshire 1987-2013	2 sites	0.6% tetrads	9% hectads
Britain 1987-1999		15% tetrads	29% hectads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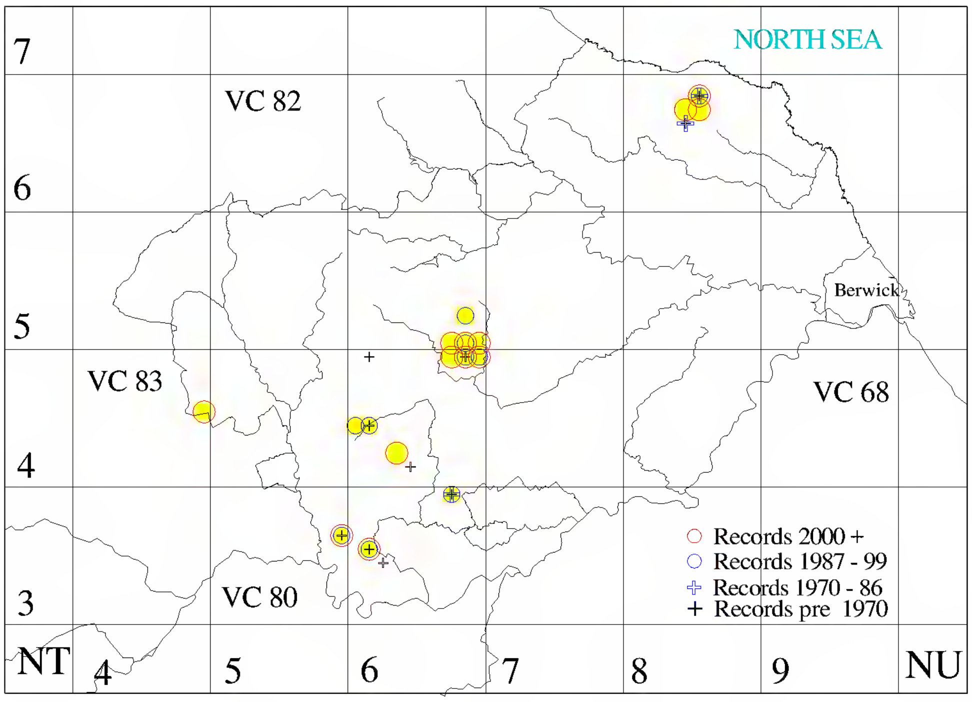
Ulex gallii is a shrub of acidic heaths in western Britain north to Galloway. It is rare and sometimes introduced elsewhere.

The several historical records indicate that this is a species native to Berwickshire. One bush survives at the lane side by Middlethird Moor Wood where there were several until the others were destroyed by a snowplough in a recent severe winter. There is quite a large colony at Penmanshiel 76 in a cutting hurriedly constructed for the railway after a tunnel had collapsed in 1979 with the loss of two lives. Here it is associated with *Calluna* Heather but is accompanied by introduced *Cytisus multiflorus* White Broom, so it might also be an introduction.

Vaccinium oxycoccos Cranberry

Wetland, native, rare or scarce

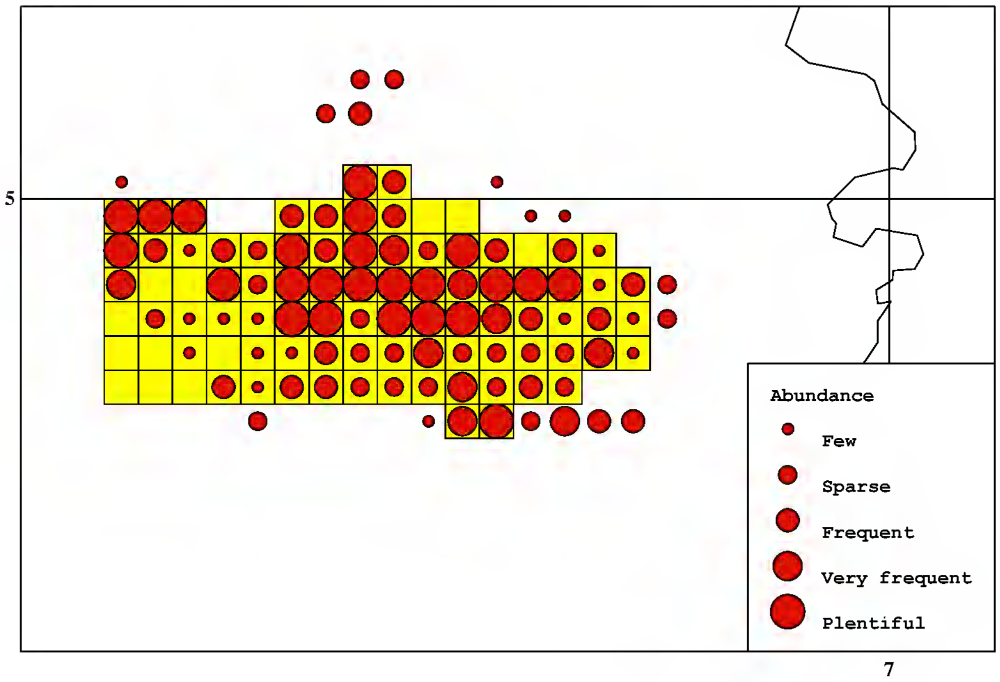
Berwickshire 1987-2013	9½ sites	3% tetrads	26% hectads
Britain 1987-1999		7% tetrads	18% hectads



Vaccinium oxycoccos is a rather local plant growing amongst *Sphagnum* in raised bogs and other moorland habitats from Wales to mid-Scotland.

There are only a few Berwickshire sites and only one, that at Dogden Moss 64, where it is plentiful enough for a gathering of berries to be possible (but undesirable). George Johnston wrote in 1853 'I can remember a time when a small quantity of native cranberries were annually sold in Berwick'. Other sites with small colonies only are Redpath Moss 53, Brotherstone Hill 63, near Gordon Moss 64, Drone Moss 86 and Long Moss 86.

The *Vaccinium oxycoccus* at Dogden Moss was surveyed in detail in 2007. It was found to be very widely distributed across the moss, which has active *Sphagnum* over an extent of close to 1km^2. The plants are more numerous near the centre of the moss and only fruit well in this area, especially where *Betula pubescens* Downy Birch has colonised. Further colonies of cranberry occur at the foot of the rand where it joins the lagg. The tendency of the plants to have glabrous pedicels is unexpected and might indicate an intermediate between *V. oxycoccus* and *V. microcarpon* Small Cranberry. No plants typical of *V. microcarpon* were seen. In particular all fruits are ± globular. Roderick Corner reports that all cranberry plants from the Scottish Borders that he has examined have hairy pedicels and that he is not aware of any other characters present suggesting *V. microcarpon*. There is one site for *V. microcarpon* in Midlothian NT05. As a site for *Trichophorum cespitosum subsp. cespitosum*, Dogden Moss is perhaps the most likely site in the area for relict cranberries.



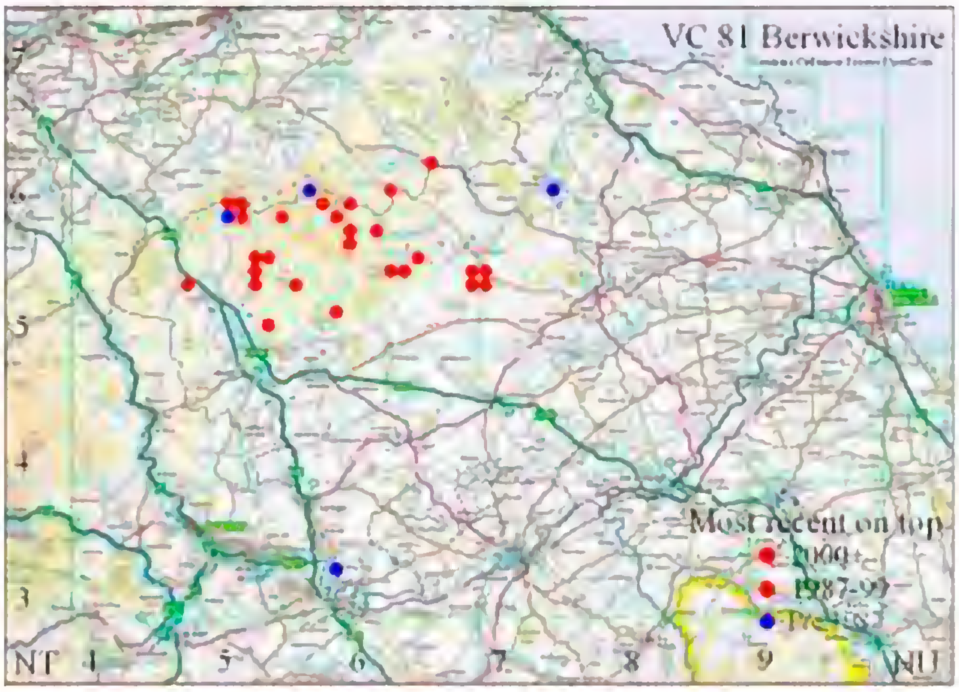
The 100m scale distribution of *Vaccinium oxycoccus* in 2007 at Dogden Moss

The yellow highlight indicates the extent of the raised bog. Some of the *Vaccinium* occurs in the surrounding rand. The course of the Fangrist Burn is indicated to the east of the bog.

Vaccinium vitis-idaea Cowberry

Moorland, native, selected axiophyte

Berwickshire 1987-2013	2% monads	7% tetrads	26% hectads
Britain 1987-1999		16% tetrads	25% hectads



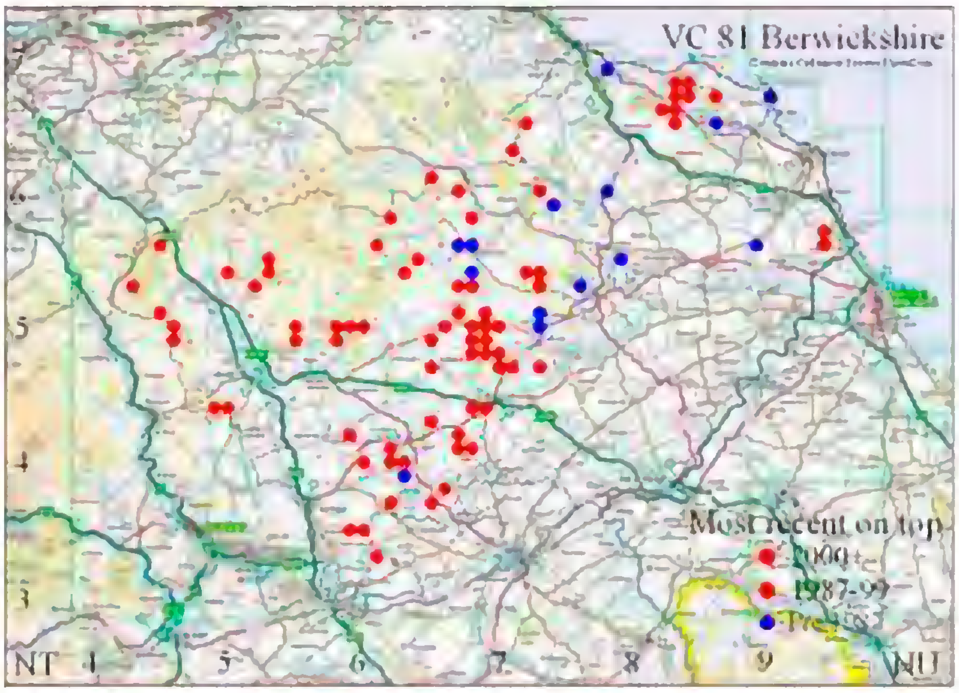
Vaccinium vitis-idaea is a dwarf shrub that is very widespread in northern Scotland but more clearly a montane plant in England and southern Scotland. It favours peaty places that are relatively well drained such as moorland with rock outcrops. In Berwickshire this is now a relatively scarce plant, though it may have been more frequent before the depredations of muirburn. The only large colonies are around the stony summits of Crib Law 55 and Dirrington Law 65; elsewhere small colonies are most typically found near the hill burns in north-facing gullies with active *Sphagnum*.

There is very little evidence of recent decline and none of recent colonisation.

Valeriana dioica Marsh Valerian

Wetland, native, other axiophyte

Berwickshire 1987-2013	6% monads	15% tetrads	52% hectads
Britain 1987-1999		8% tetrads	27% hectads



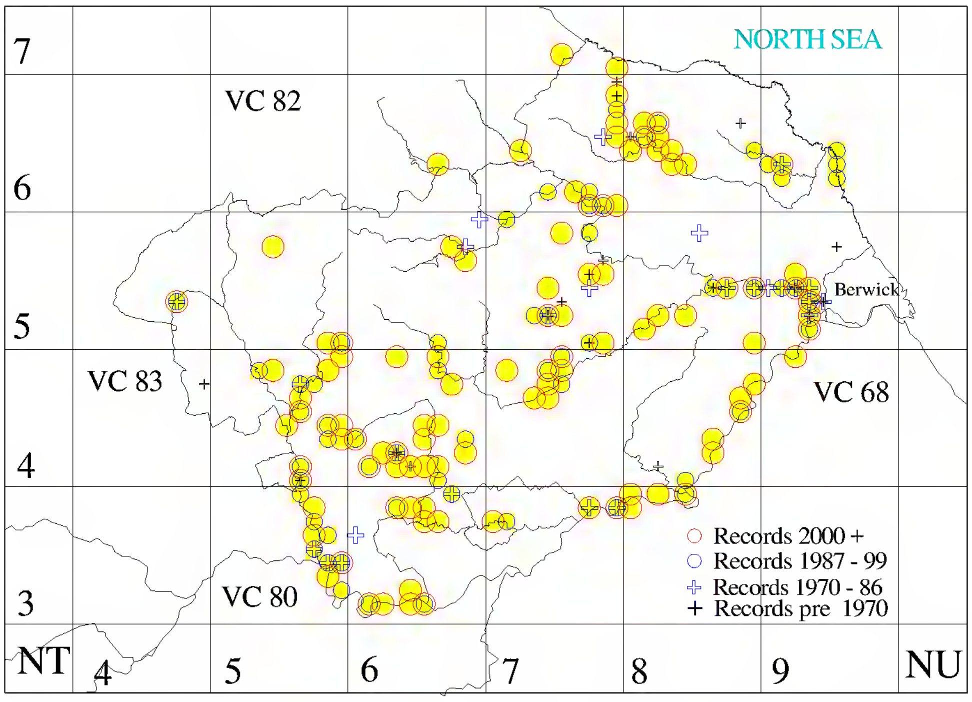
Valeriana dioica is widespread but rather local in England, Wales and southern Scotland as a plant of at least slightly base-rich flushes and shallow fens. It is surprisingly widespread in Berwickshire given that it is near its northern limit and altitude does not seem to be a limiting factor. Nevertheless it is quite local in the Lammermuirs and its main centres are in the Gordon area, around the Fangrist Burn 64 and around Coldingham Common 86 where it is fairly plentiful.

There have probably been some recent losses, but the recent resurvey has not been structured in a way to allow this to be confirmed. There is no evidence of recent colonisation.

Valeriana officinalis Common Valerian

Wetland, native, other axiophyte

Berwickshire 1987-2013	12% monads	28% tetrads	87% hectads
Britain 1987-1999		48% tetrads	75% hectads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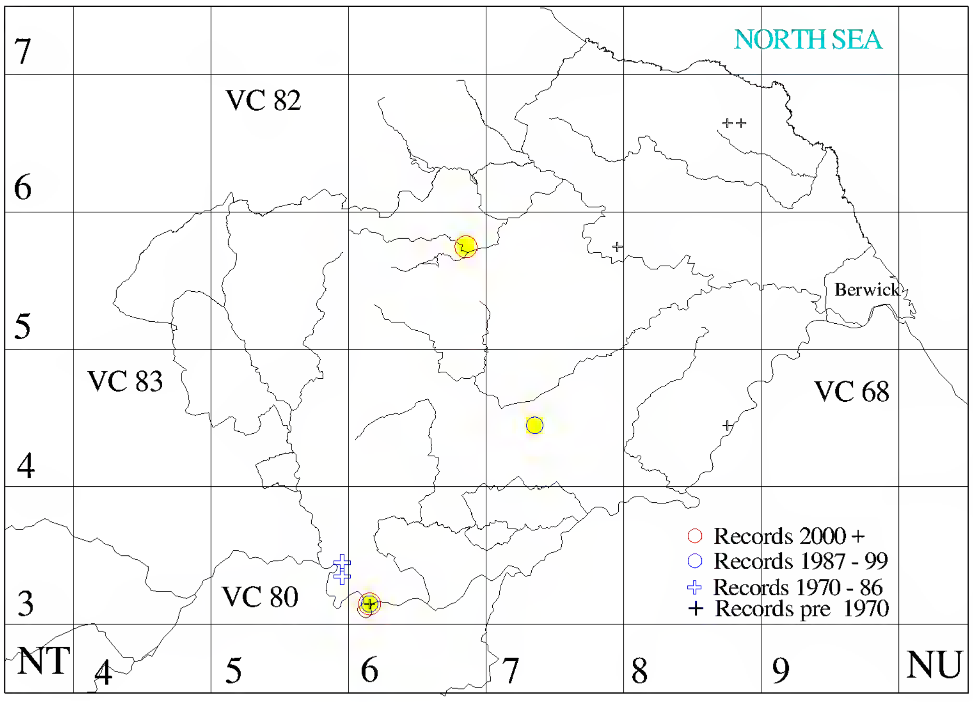
Valeriana officinalis is widespread throughout Britain in fens and beside burns and rivers. In Berwickshire its distribution almost exactly complements that of *V. dioica* Marsh Valerian, with *V. officinalis* occupying more lowland sites, especially riversides. Nevertheless many of the riverside populations are small and potentially vulnerable, often at the foot of small burns or seepages. It follows that the few larger fen populations, such as those around Gordon Moss 64, are a very significant part of the total population.

There is probably a modest cycle of colonisation and losses in the riverside populations, but with little net recent change at 1km scale.

Valeriana pyrenaica Pyrenean Valerian

Riverside, neophyte

Berwickshire 1987-2013	3 sites	1% tetrads	13% hectads
Britain 1987-1999		1% tetrads	4% hectads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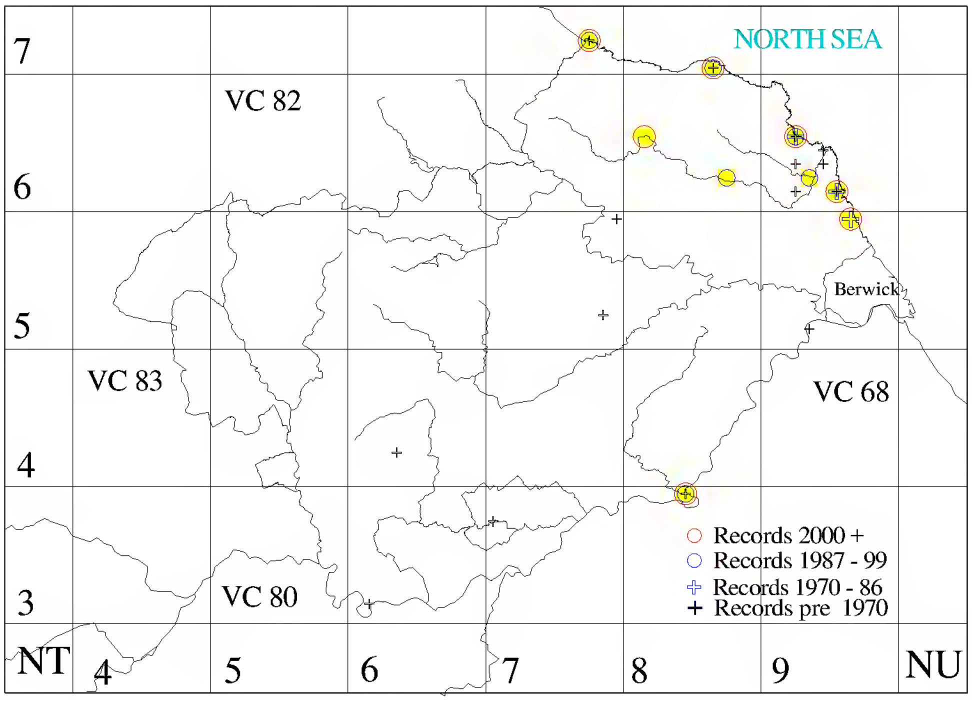
Valeriana pyrenaica is quite widely naturalised in wet woods in Scotland but is rare in England. In the Scottish Borders it is especially plentiful within the town of Hawick, Roxburghshire NT51 where it grows by small burns and along the River Teviot. In contrast it is scarce in Berwickshire where all the colonies seem to have arisen from individual introductions rather than by seed carried down the river system. It is plentiful by a burn at Mertoun House 63 and on rocks by the River Tweed nearby. Elsewhere there is large colony at Rowchester House 74 and another on the edge of Longformacus village 65.

Valerianella locusta Common Cornsalad

Grassland, native, rare or scarce

Berwickshire 1987-2013	8¾ sites	2% tetrads	26% hectads
Britain 1987-1999		10% tetrads	33% hectads



Valerianella locusta is a plant of sandy places, less frequently of rocky knowes with pockets of erosion and ruderal habitats. It is widespread in Britain but more frequent in the south. This species and *V. carinata* Keeled-fruited Cornsalad are sown in gardens as a salad crop and may escape.

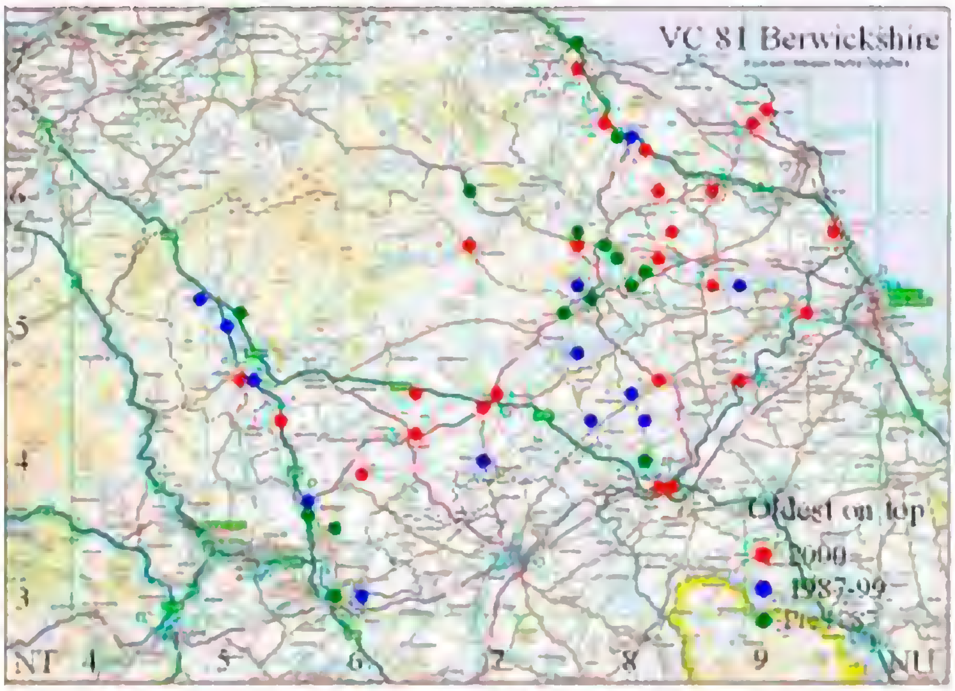
The more natural Berwickshire sites are on the coast. It is scarce at Ramsheugh Bay 77, quite plentiful in Dowlaw Dean 87, very scarce at Linkim Shore 96, quite plentiful on the sea braes north of Burnmouth 96 and in a few places near the railway by Hilton Bay 95. Inland it grows on a bank near the A1 at Grantshouse 86 and at the foot of old walls in Coldstream 83.

It is thought to have declined and to be continuing to do so, but the historial record is rather incomplete.

Verbascum thapsus Great Mullein

Ruderal, archaeophyte

Berwickshire 1987-2013	4% monads	11% tetrads	74% hectads
Britain 1987-1999		31% tetrads	59% hectads



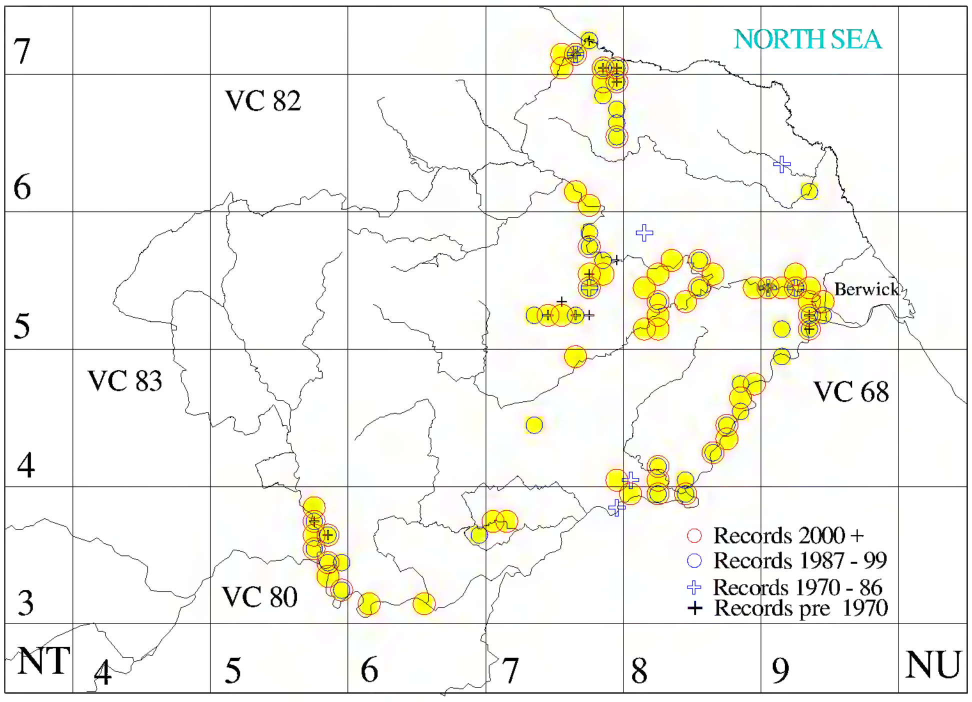
Verbascum thapsus is very widespread in England but less so in Scotland. It is most often found in ruderal habitats and as a result the northern limit of its native distribution is very unclear.

In Berwickshire its status is uncertain, but it is widely though thinly distributed on dry banks and waste places, mostly in towns and villages and along the road network which suggests an archaeophyte. There is evidence of a cycle of colonisation and local extinction, but some colonies are long-lived. On 29 March 2008 I revisited a sample of ten localities where it had been last recorded from 4 to 18 years previously. It was refound in five localities and was judged to have been casual in the remainder, though a seed bank may remain in unfavourable habitat. The count of over-wintering rosettes of this mainly biennial species in the five extant sites was 1, 8, 12, 14 and 125. The largest colony was in Grantshouse Quarry 86.

Veronica montana Wood Speedwell

Woodland, native, other axiophyte

Berwickshire 1987-2013	7% monads	16% tetrads	57% hectads
Britain 1987-1999		30% tetrads	56% hectads



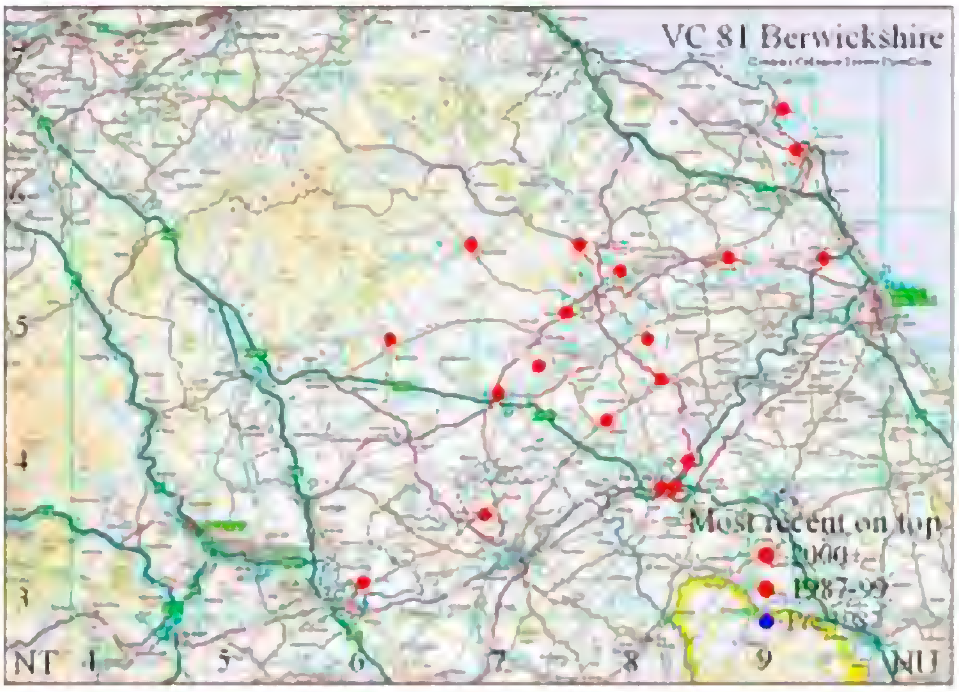
Veronica montana is widespread in England and Wales but more local in Scotland. It is a woodland herb avoiding the most acidic soils. In Berwickshire it is as often found in secondary woodland as in ancient woodland, but the distribution map suggests that it seldom spreads far from ancient woodland. There are very few records far from the principal rivers and upstream limits are at surprisingly low altitude, especially by the Leader Water. The two old records from the Eye and Ale Waters 96 are puzzling as the species has not been refound there despite searching. They may have been errors for *V. chamaedrys* Germander Speedwell.

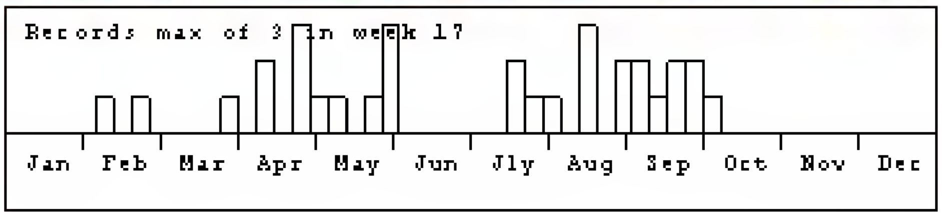
Field experience suggests that this species is effectively dispersed within woodlands. It may also be dispersed by flood water. Most populations appear stable and may even be increasing.

Veronica polita Grey Field-speedwell

Ruderal, archaeophyte, rare or scarce

Berwickshire 1987-2013	15 sites	5% tetrads	43% hectads
Britain 1987-1999		14% tetrads	28% hectads



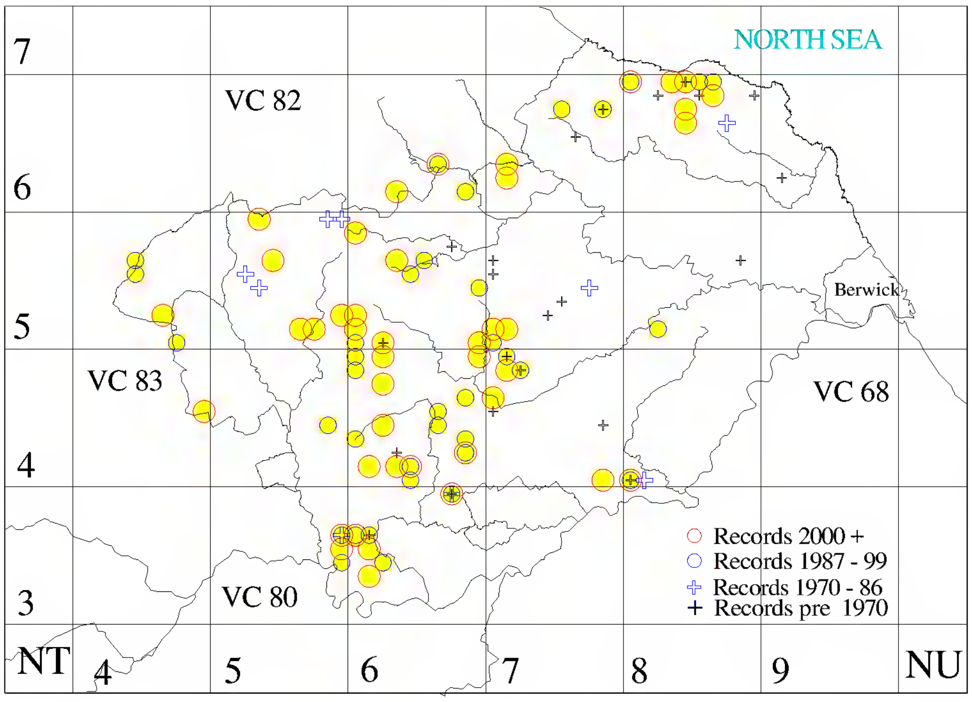


Veronica polita is a weed of gardens, public places and, rather rarely, of arable fields. It is widespread in southern England but more local in the north and in Scotland. The date of its introduction to Britain is not known, as it was formerly confused with *V. agrestis*, but it could be before or after 1500.

Its Berwickshire localities are in the walled gardens of mansion houses at Mertoun 63, Newton Don 73, Manderston 85 and Mordington 95; in public places at Gavinton 75, Coldstream 83, Swinton 84, Lennel 84 and St Abbs 95; and in small gardens at Westruther 65, Longformacus 65 and Leitholm 74. It often grows with *V. agrestis* Green Field-speedwell. There are no Berwickshire records from arable fields. It favours sunny micro-habitats and flowers from as early as February to October, as shown in the chart, with the records by weeks within months.

Veronica scutellata Marsh Speedwell

Wetland, native, other axiophyte
Berwickshire 1987-2013 6% monads 16% tetrads 65% hectads
Britain 1987-1999 20% tetrads 44% hectads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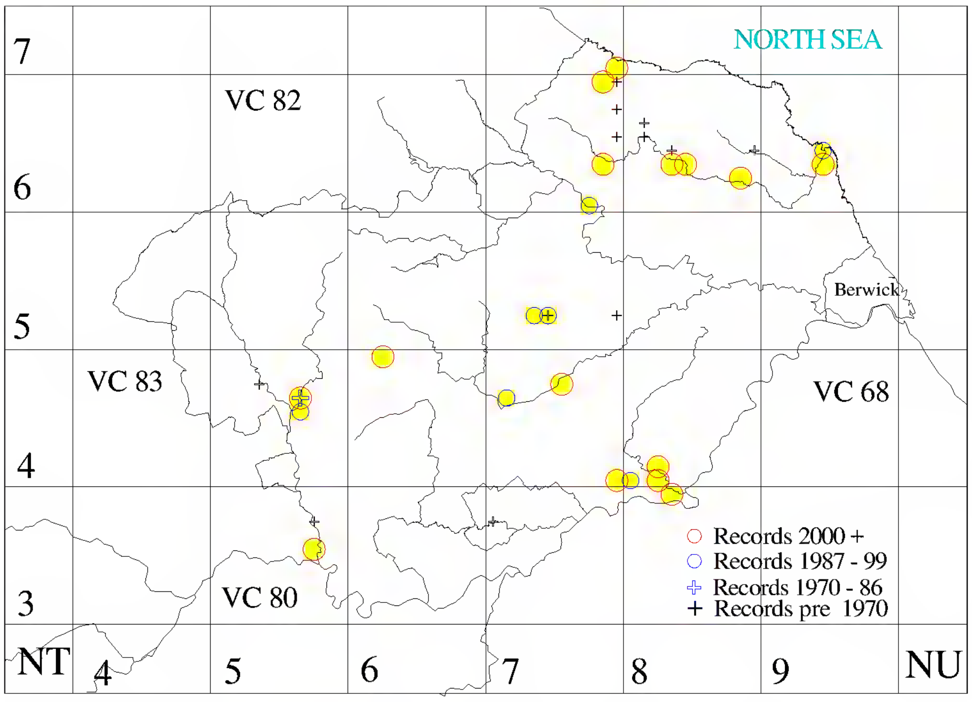
Veronica scutellata is widespread but local in Britain and is most frequent in the west. It grows in a range of wetland habitat, most typically shallow fens and relatively acidic flushes at the moorland edge. It may also be found in carr woodland. It is very scattered in Berwickshire. The poor correlation between the records from different surveys reflects the difficulty in observing this inconspicuous species rather than change. The isolated colonies in the Merse are in carr woodland at Bishop's Bog 74 and Lithtillum Loch 84.

The hairy variety, *var. villosa*, has only been recorded in two monads.

In view of the inadequate survey, little can be deduced from the distribution map about decline or spread, though a history of decline seems inescapable in view of the continuing drainage of the marginal land where it is most often found.

Viburnum opulus Guelder-rose

Woodland, native, rare or scarce
Berwickshire 1987-2013 5½+12 sites 6% tetrads 48% hectads
Britain 1987-1999 38% tetrads 57% hectads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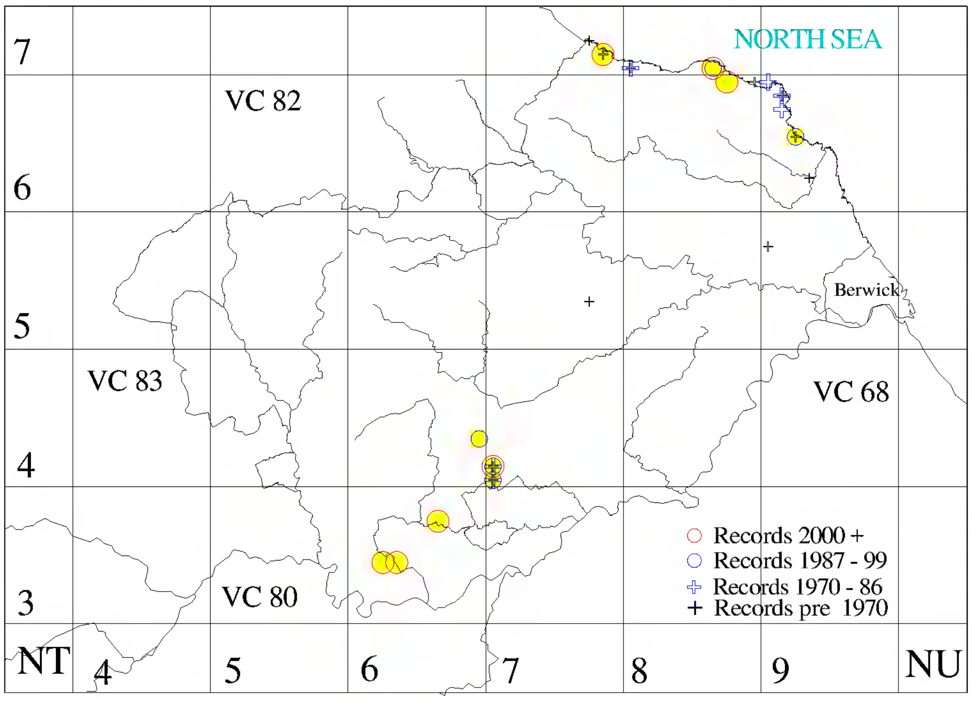
Viburnum opulus is a shrub of calcareous woodland that is very widespread in England and Wales but more local in Scotland.

It is almost extinct as a native in Berwickshire, but is now much in fashion for planting. The native sites are on a cliff by the Leader Water near Redpath 53, on the Boondreigh Water 54, Langtonlees Cleugh 75, Wild Wood 76 and Green Wood 86. At some of these there is just one bush, usually as a suckering patch, at none more than a very few bushes. Amenity plantings include Birgham Wood 74, Tower Dean 76, Hirsel Woods 84 and Eyemouth 96. Some of these plantings are in woodland of botanical interest.

Vicia lathyroides Spring Vetch

Grassland, native, rare or scarce

Berwickshire 1987-2013	6¾ sites	2% tetrads	30% hectads
Britain 1987-1999		2% tetrads	10% hectads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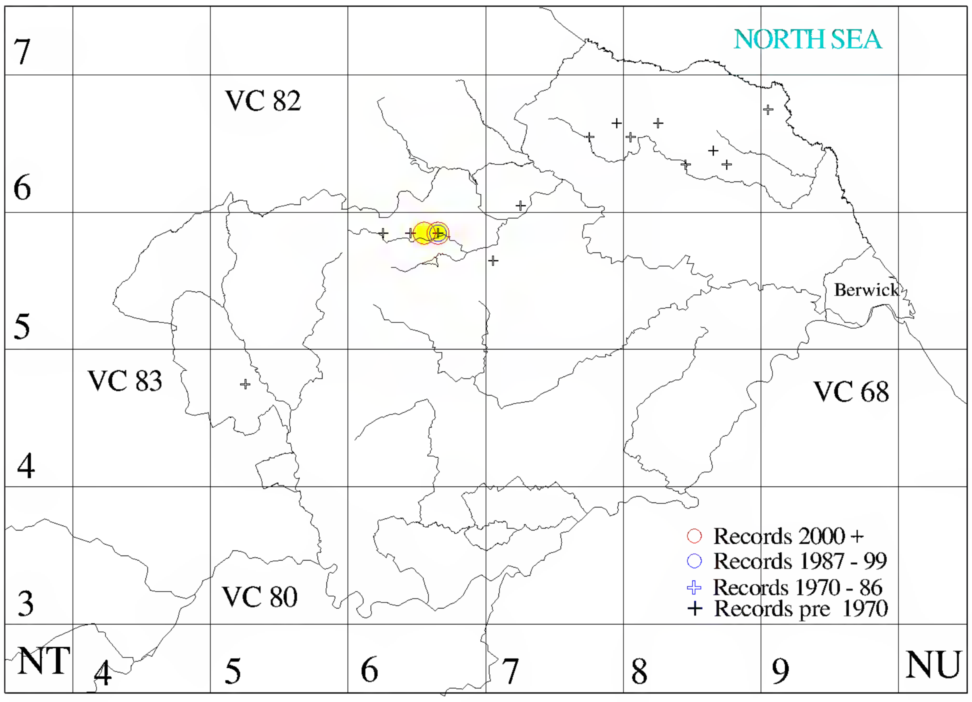
Vicia lathyroides is a herb of rocky knowes and sandy grassland that is local and rather coastal in lowland Britain.

Its Berwickshire populations are small but numbers of this elusive early-flowering annual vary from year to year. There are several sites on the intrusive rocks of the Kelso Traps: a small colony at Butchercote Craigs 63, a better one at Muckle Thairn 63, and a colony almost engulfed in whins at Hume Craigs 74. The other habitat is sandy fields near the coast where the best colony is in fields near Dowlaw Dean 86, 87, but these are not under favourable management. It has also been found at Cove 77 in 2008 and Linkim Shore 96 in 1994.

Vicia orobus Wood Bitter-vetch

Grassland, native, rare or scarce, British scarce

Berwickshire 1987-2013	1 site	0.6% tetrads	4% hectads
Britain 1987-1999		0.5% tetrads	3% hectads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Vicia orobus is a herb of base-rich banks with rocky grassland. It is found locally in Wales, southern Scotland and the Inner Hebrides and is rare elsewhere.

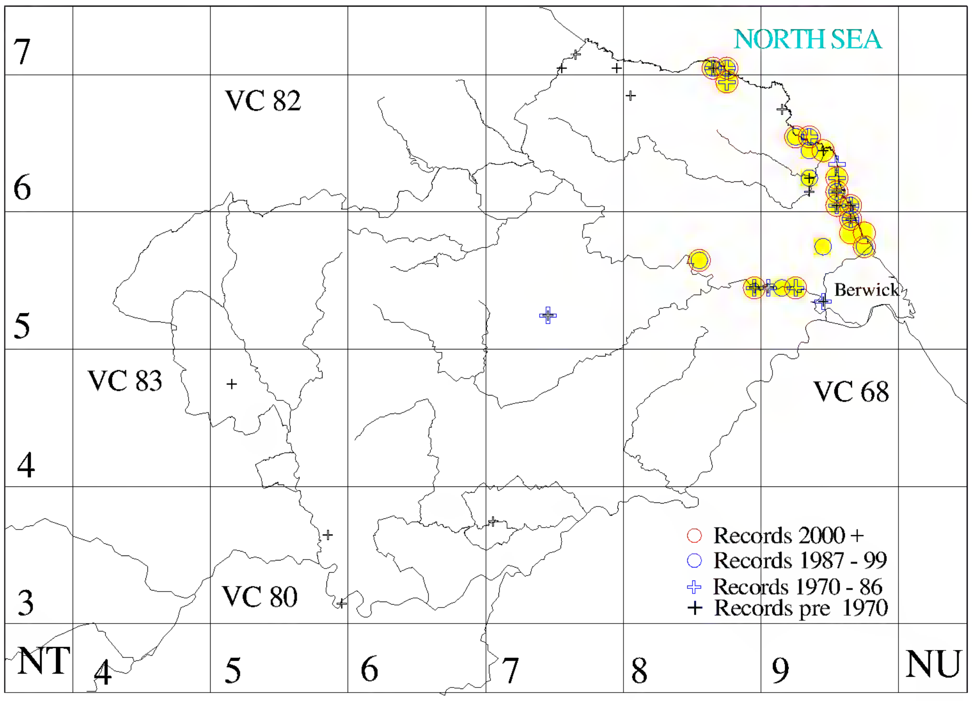
This species has declined dramatically across the whole of southern Scotland. The one remaining Berwickshire site near Horseupcleugh 65 was surveyed in detail in 2008. Plants were found in seven 100x100m cells at three sub-sites. The largest sub-site with four such cells is up the Wester Burn on dry banks with *Helianthemum* Rockrose. Part of this bank is over-grazed while the rest has recently had the grazing removed and has some fine plants but may soon suffer from the lack of grazing. A further sub-site with two cells is to the east of Nuns' Bank near the foot of the Wester Burn, while the third sub-site is a little further afield within a 10x10m area on a heather-covered bank just above the Dye Water at Wrunklaw. The heather was burnt there soon after the plant was surveyed and its fate is unknown.

Vicia orobus
Horseupcleugh

Vicia sylvatica Wood Vetch

Woodland, native, Berwickshire fine

Berwickshire 1987-2013	1% monads	4% tetrads	22% hectads
Britain 1987-1999		2% tetrads	11% hectads



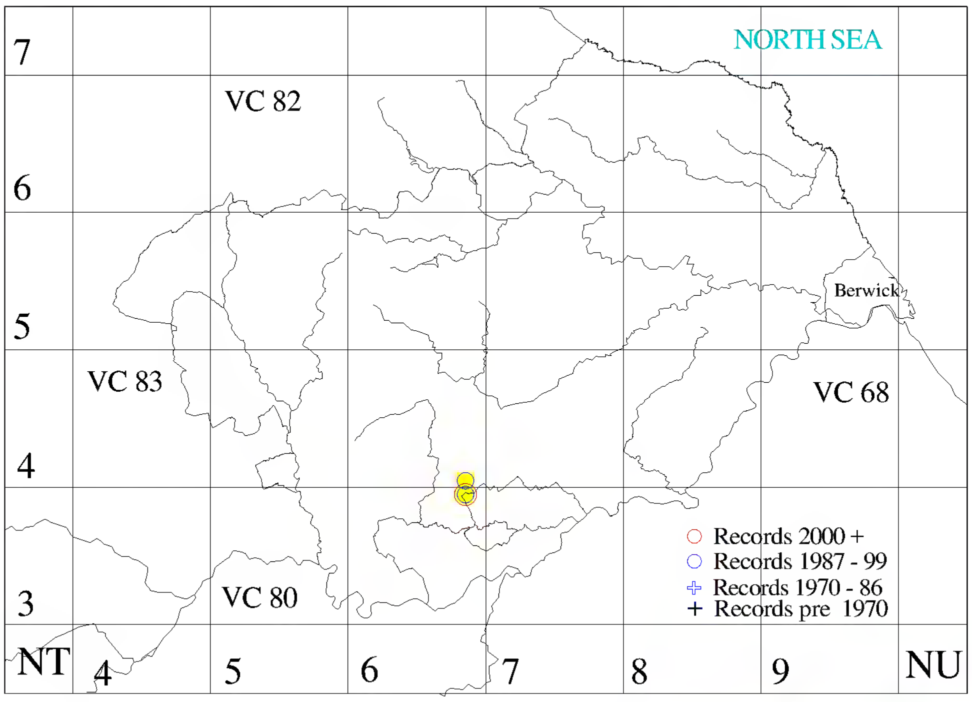
Vicia sylvatica occurs in a curiously scattered distribution across Britain being frequent in just a few areas, one of which is the coast of Berwickshire and East Lothian. It is a woodland-edge plant requiring base-rich soils and rocks or scrub to scramble over. On the Berwickshire coast it is very plentiful along considerable stretches of the sea braes north of the Border, colonising upwards onto banks by the mainline railway and the A1 trunk road. Further north, it is conspicuous in Dowlaw Dean 87 and the coast nearby. In contrast, the sites by the lower Whiteadder Water are not prospering. They occur by some of the many scaurs where scrub exists precariously on steep eroding banks. There seems to have been a recent tendency either for the scrub to mature squeezing out this vetch, possibly following plantings, or for the banks to collapse completely. This may well be a cyclical process and the long-term prospects could be better than they appear.

Populations in the west of the county have been lost at early dates and there may have been more recent losses, as at the foot of the Ale Water 96.

Viola arvensis x lutea A hybrid Pansy

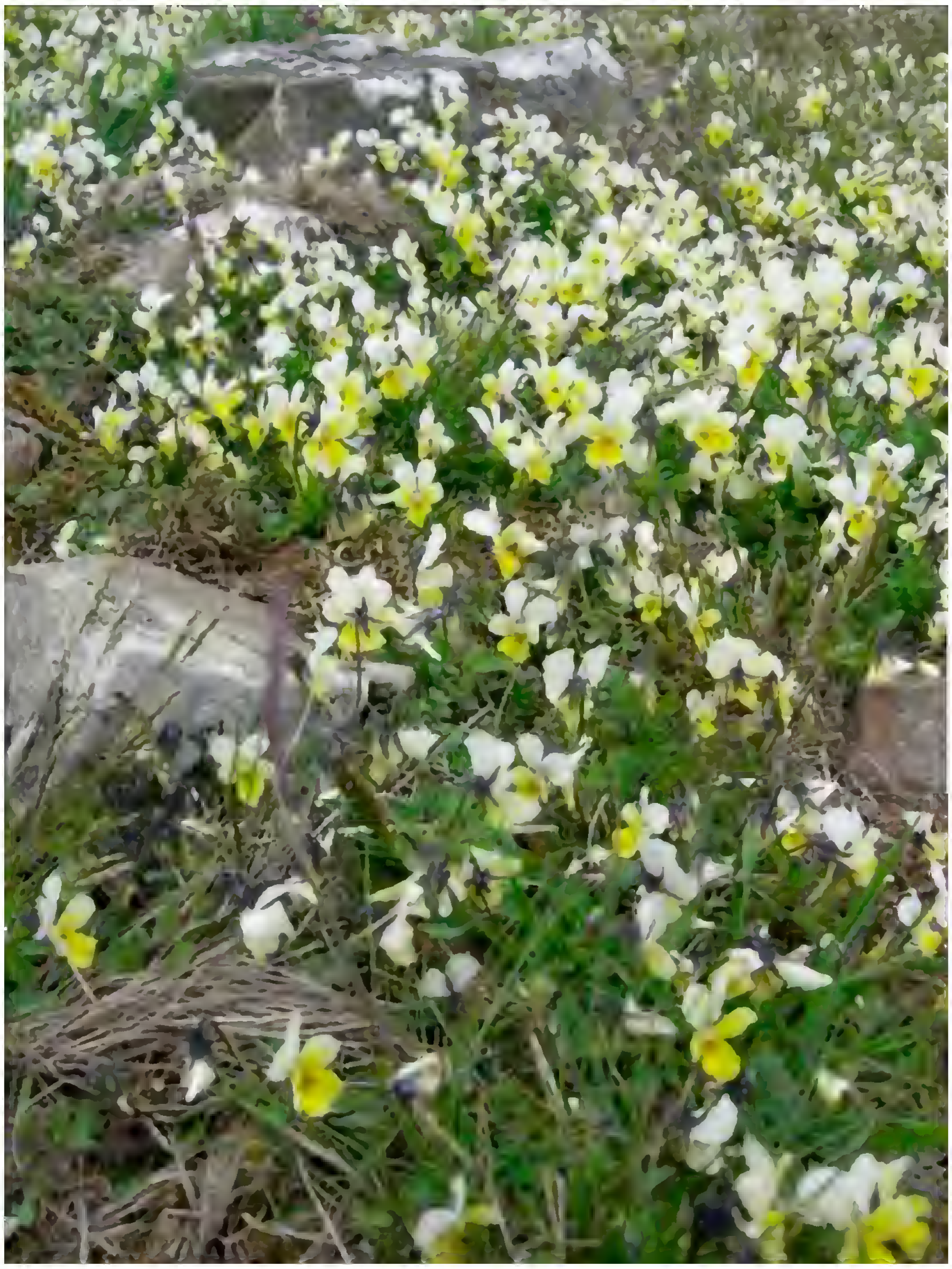
Grassland, native, rare or scarce, British rare

Berwickshire 1987-2013	1 site	0.6% tetrads	9% hectads
Britain 1987-1999		0.004% tetrads	0.1% hectads



Viola arvensis x lutea is the probable parentage of two interesting British pansy populations, one in Berwickshire at Hareheugh Craigs 63 and one in Yorkshire. There are somewhat similar plants at Smailholm Craigs in Roxburghshire NT63 which may or may not be of the same parentage.

The plants at Hareheugh Craigs are fertile and grow in a dense colony over an area of 10x20m on a rocky south-facing slope on the basalt. It is thought that some of the plants are annual and some short-lived perennials. The plants are free-flowering with white upper petals and yellow lower petals. Of the parents, the yellow-flowered form of *V. lutea* Mountain Pansy also grows on the craigs, but favouring north-facing slopes, while *V. arvensis* Field Pansy grows in arable fields nearby. The colony may or may not extend from NT63 to NT64, just a few metres to the north.

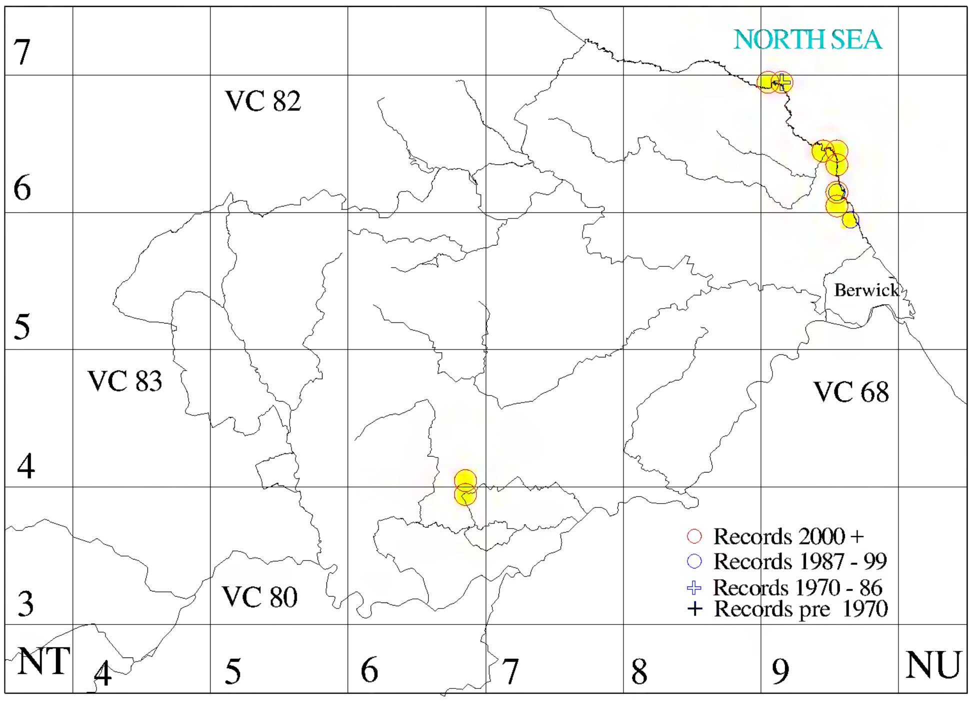


Hareheugh Craigs
23 May 2007

Viola canina Heath Dog-violet

Grassland, native, rare or scarce

Berwickshire 1987-2013	6¾ sites	2% tetrads	17% hectads
Britain 1987-1999		4% tetrads	17% hectads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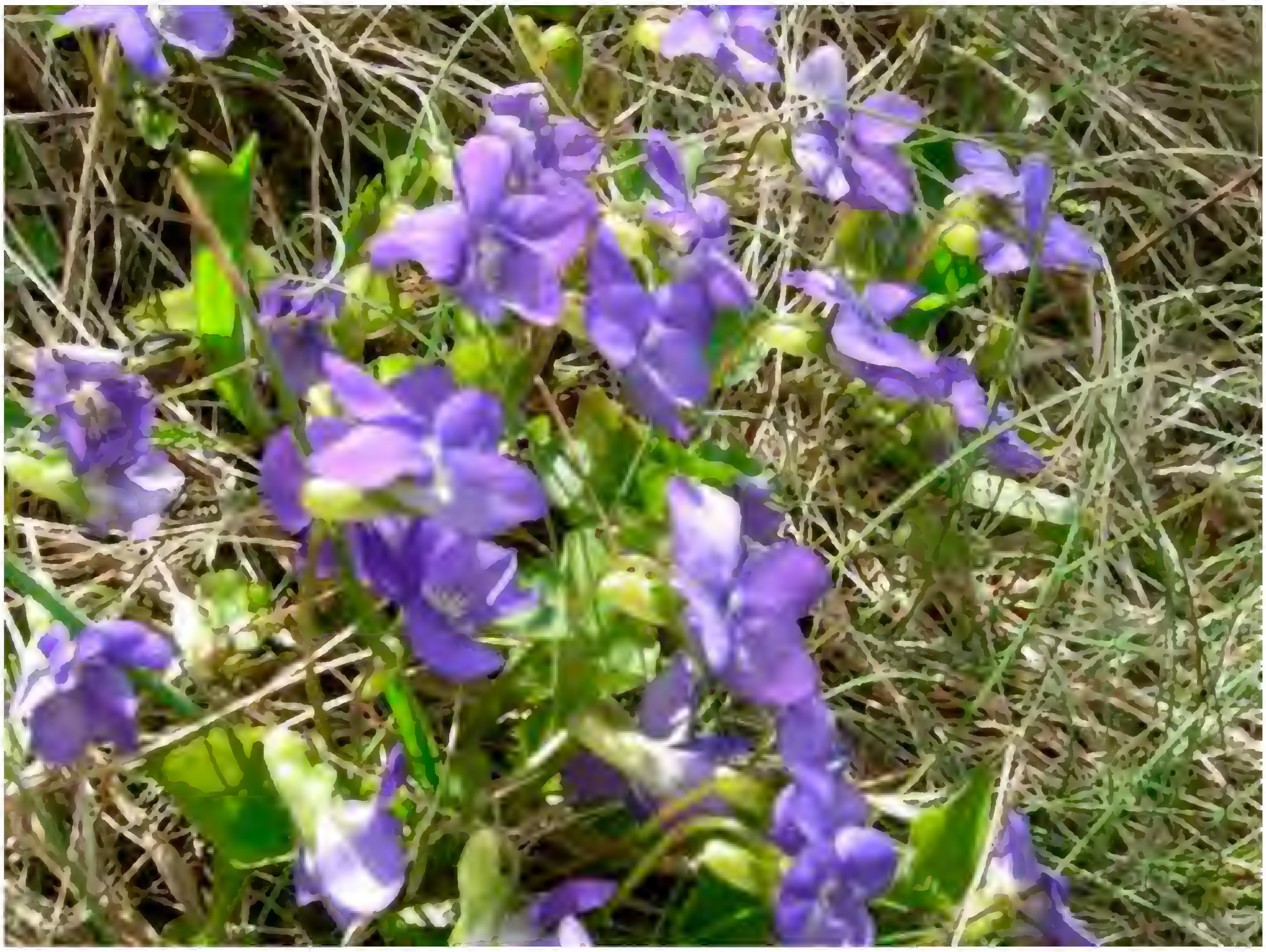
Viola canina is found throughout Britain but is local and somewhat coastal. It grows on moorland rock outcrops, gravels and coastal sand, but only where there is some base-enrichment.

The only inland site in Berwickshire is at Hareheugh Craigs 64 where there are just a few large plants on the basalt. On the coast, much the best colony is in a small gully on the sea braes at Gunsgreen 96 but there are occasional plants along the cliff top south to Burnmouth 96 and on the sea braes both to the north and south of the village. A plant was found in 1990 near Hilton Bay 95. Further north, there are just a few plants on knowes inland from the Lighthouse at St Abbs Head and above Petticowick 96.

The historical distribution is unknown, as this species was formerly confused with *V. riviniana* Common Dog-violet.

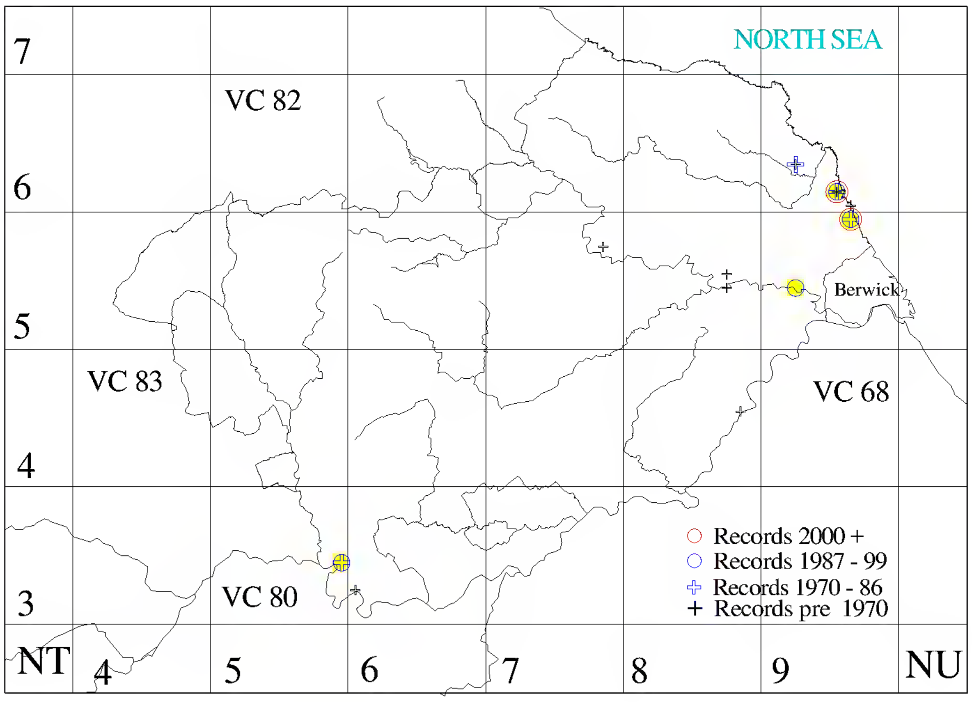


Burnmouth 12 May 2010

Viola hirta Hairy Violet

Grassland, native, rare or scarce

Berwickshire 1987-2013	3 sites	1% tetrads	13% hectads
Britain 1987-1999		10% tetrads	25% hectads



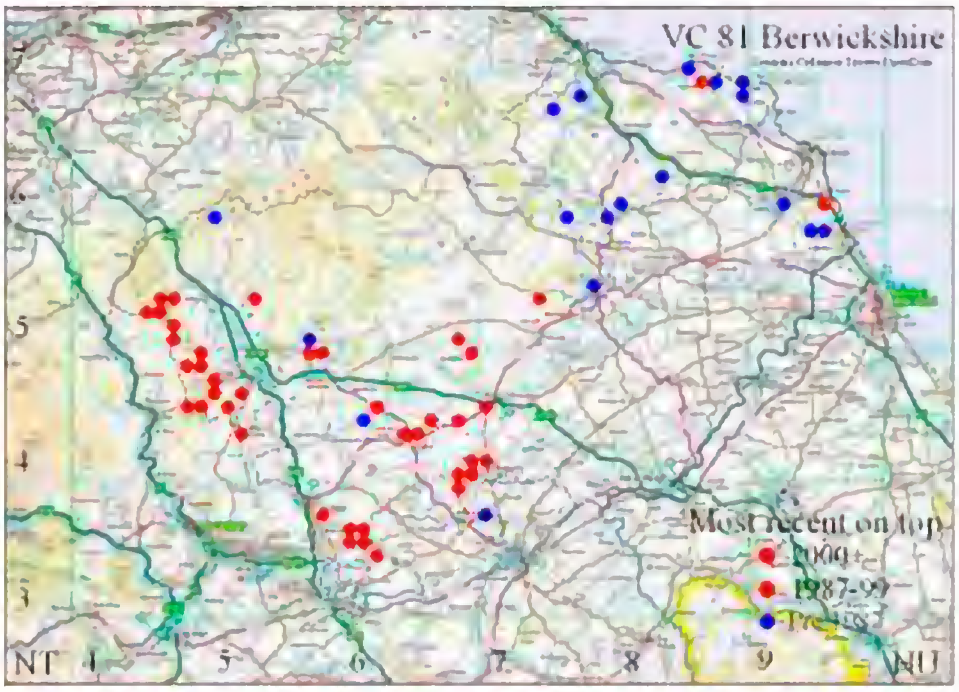
Viola hirta is a plant of calcareous grassland that is widespread in southern England but scarce elsewhere.

The few Berwickshire colonies are in sad decline. It has not been seen since 1993 at Gaitheugh 53, though there is no reason to think it extinct there. However the formerly quite extensive colony associated with *Sanguisorba minor* Salad Burnet on the sea braes north of Burnmouth 96 has been almost overwhelmed by scrub. A single plant was found on a bank near Hilton Bay 95 in 2013.

Viola lutea Mountain Pansy

Grassland, native, Berwickshire fine

Berwickshire 1987-2013	3% monads	8% tetrads	52% hectads
Britain 1987-1999		5% tetrads	12% hectads



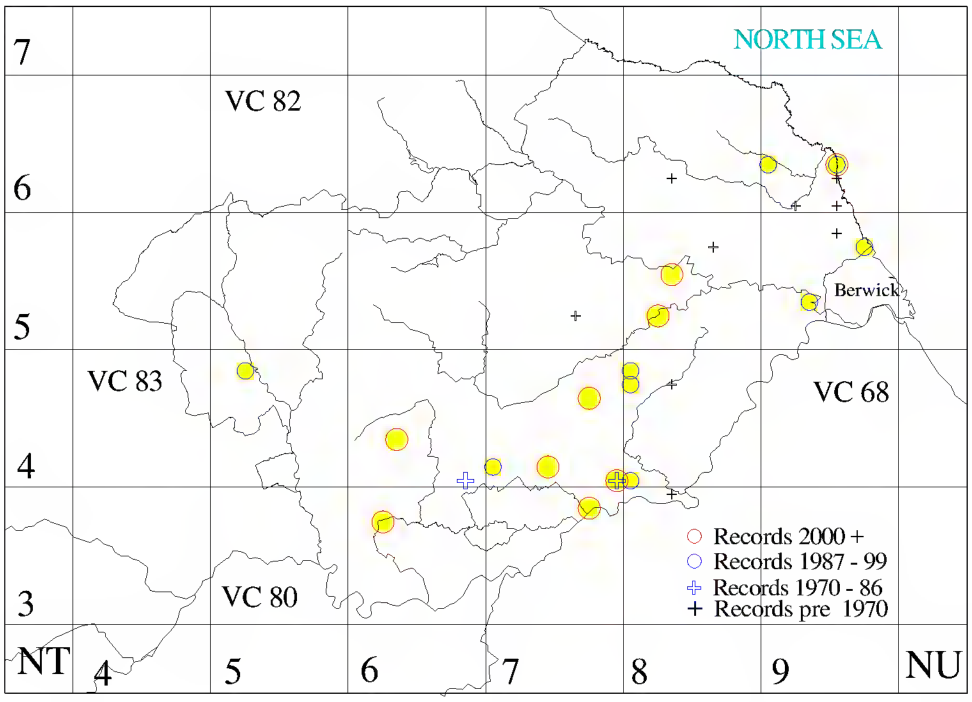
Viola lutea is a widespread grassland herb in the hill country of Wales, northern England, south and central Scotland. The present Berwickshire distribution is markedly western but the relatively extensive historical record shows that it was formerly also a feature of hill grassland in the east of the county. Very acidic soils are unsuitable but so also are calcareous soils. In Berwickshire this means that some of the Silurian rocks are the most suitable, but not those that underlie the heather moorland of the Lammermuirs. The Old Red Sandstone is unsuitable. The intrusive rocks of the Kelso Traps are selectively colonised with *V. lutea* favouring strata that are not easily weathered and north-facing sites. The eastern sites show a high degree of correlation with the earthworks of Iron Age hill forts, as with the surviving colonies at Raecleugh Head Hill 75 and Chester Hill 96. Almost all the populations are of the yellow-flowered form, a few purple-flowered plants are found in some of the most western populations.

Viola tricolor subsp. tricolor Wild Pansy

Grassland, native, rare or scarce

Berwickshire 1987-2013	8¼ sites	5% tetrads	39% hectads
Britain 1987-1999		14% tetrads	34% hectads

Viola tricolor subsp. tricolor is a plant of sandy grassland and sandy arable fields that is widespread in Britain, but local and scarce in many areas.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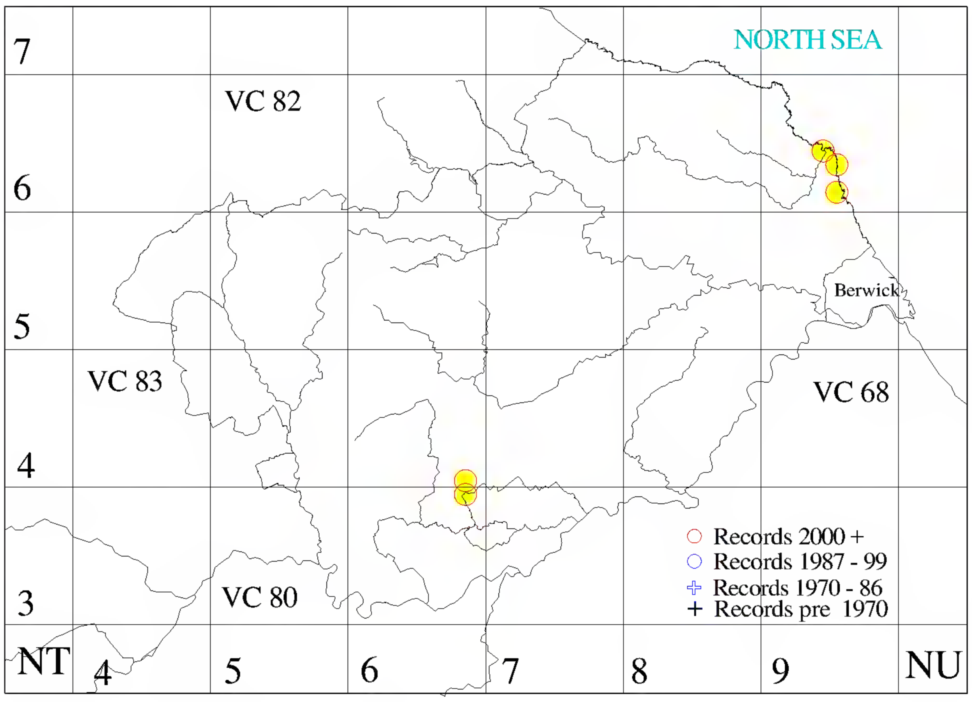
The Berwickshire population includes perennial plants in grassland and annual plants in arable fields. The best grassland site is along the cliff top south of Gunsgreen 96 where the plants are very thinly scattered over 300m, while there may still be a small population at Hume Craigs 74. The arable sites are well scattered and the species only flourishes when cropping is suitable, though some populations appear to show herbicide resistance. The fields where it has been found recently are by the Covehouse Burn 63, near Gordon Moss 64, near Loanknowe 74 where it was plentiful, by Printonan Covert 74, near Horse Bog 74, near Mouth Bridge 85, near Edrom 85 and below Lamberton 95.

Viola x intersita = V. canina x riviniana A hybrid Dog-violet

Grassland, native, rare or scarce

Berwickshire 1987-2013	3 sites	2% tetrads	13% hectads
Britain 1987-1999		0.1% tetrads	1% hectads

Viola x intersita grows in similar habitats to *V. canina* Heath Dog-violet but is apparently somewhat more catholic in its choice. It appears to be sterile, though it is sometimes frequent enough to form a colony and the robust individual plants may be long-lived.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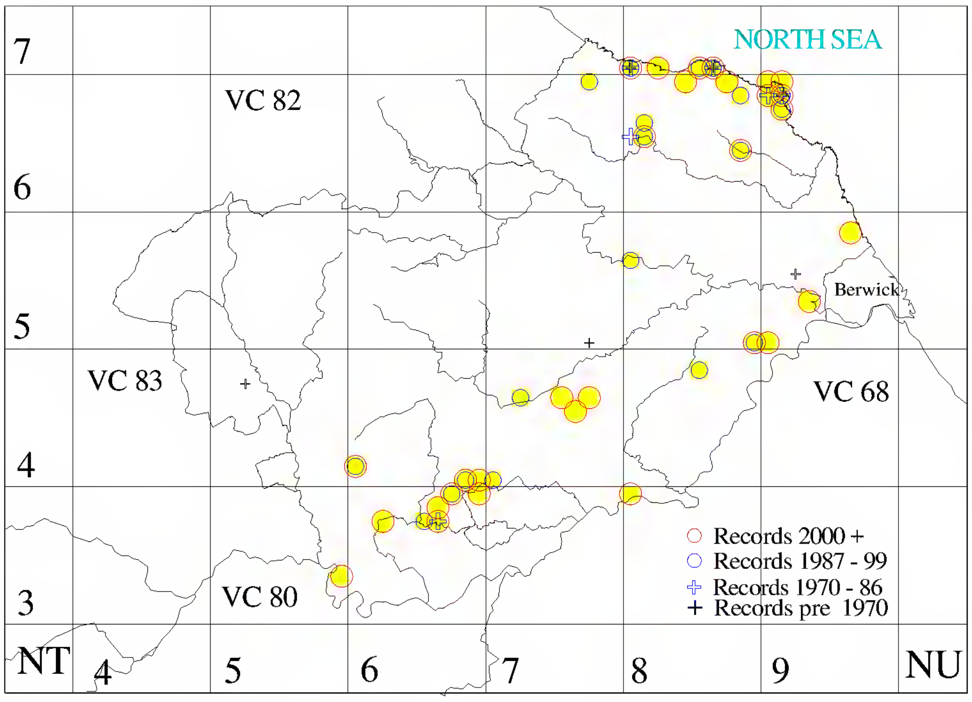
One of the Berwickshire sites is at Hareheugh Craigs 64 where there is a colony of robust plants in which it is more numerous than the *V. canina* close by. At Gunsgreen 96 there are scattered robust plants over a similar area to that of its *V. canina* parent, in gullies on the sea braes and along the cliff top.

There are several sites of this hybrid in Roxburghshire where it may be found with or without *V. canina* and may be resisting habitat change where *V. canina* is declining to extinction.

Vulpia bromoides Squirrel-tail Fescue

Grassland, native, other axiophyte

Berwickshire 1987-2013	3% monads	9% tetrads	52% hectads
Britain 1987-1999		19% tetrads	47% hectads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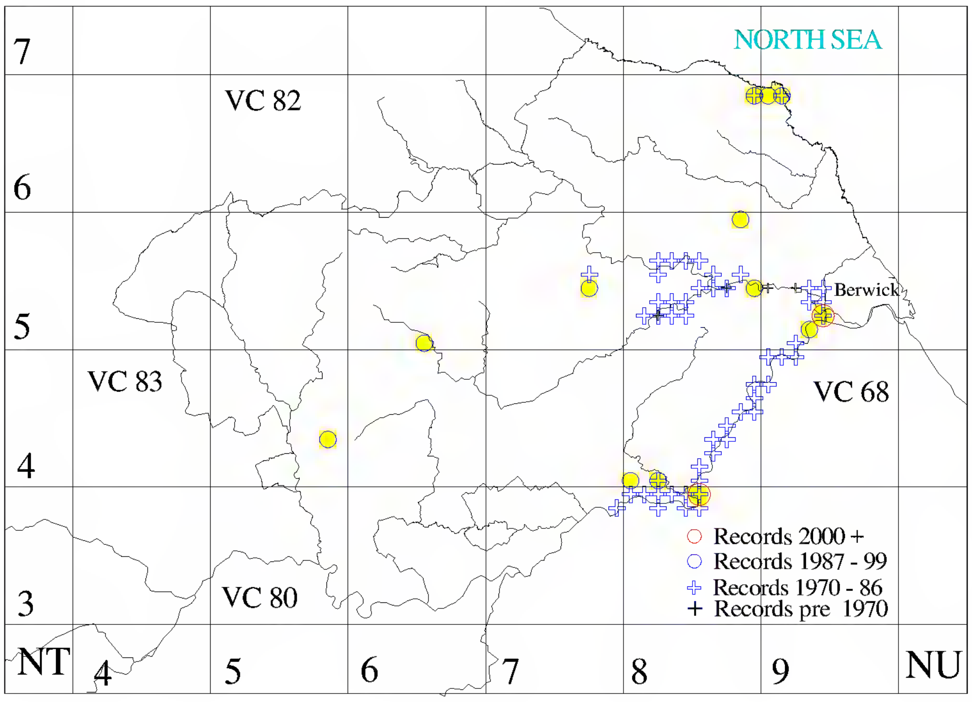
Vulpia bromoides is a grass with a predominantly southern distribution in Britain and is found on sandy or other well-drained soils. It is found in both natural and man-made habitats. In Berwickshire the main concentration of sites is along the coast, though the more calcareous soils are not colonised. There are large colonies on the landward-facing slopes at St Abbs Head 96. The intrusive rocks of the Kelso Traps are also colonised, but most of the populations there are small. Disused wartime airfields at Charterhall 74 and Winfield 85 harbour large populations on the old runways. At Winfield it is associated with *V. myuros* Rat's-tail Fescue. There are smaller populations of *V. bromoides* in old quarries and a few more or less casual occurrences

Some of the coastal populations appear to be increasing, especially that at St Abbs Head 96, but this may be no more than the normal fluctuations expected in an annual species in response to short-term climatic factors. There is no evidence of wider recent colonisation as casual occurrences do not seem to be increasing.

Zannichellia palustris Horned Pondweed

Aquatic, native, selected axiophyte

Berwickshire 1987-2013	1% monads	3% tetrads	39% hectads
Britain 1987-1999		4% tetrads	26% hectads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Zannichellia palustris is local in England and scarce in Scotland. It is a species of slow-moving eutrophic or brackish water and its apparent severe decline in Berwickshire is unexpected. It was very widespread in the lower reaches of the River Tweed and the Blackadder and Whiteadder Waters in the 1970's, occasional in the 1990's and all but absent since 2000.

It seems one of the aquatic species least likely to be a problem to fishing interests as it is usually found in quiet spots at the river edge, so one is wary of pointing a finger in that direction.

8. The decline of Berwickshire's scarce plants

This section is presented in two subsections. The first analyses the decline in scarce plants statistically, the second reviews botanical change in Berwickshire's SSSIs over 35 years

Statistical

Introduction

Although there is much agreement among field botanists that many of Britain's wildflowers are in sad decline, there is surprisingly little quantitative evidence for this. It is instructive to consider briefly why this is so.

One obvious statistic to turn to is the number of extinctions of native species per county. This proves elusive as such lists commonly contain some species whose former status in a particular county is in doubt. For example, some such species may have only ever been recorded once and with little or no supporting detail. Even if the lists are edited to make them consistent, there are difficulties in deciding whether or not a particular species is indeed extinct or has merely been overlooked and when any losses occurred.

Mapping schemes, notably the two BSBI hectad atlases of Britain in 1962 and 2002, are even more unsatisfactory. The more recent atlas survey coverage was very much more comprehensive than the first and unevenly so from species to species (The Berwickshire surveys suffer from the same problem to an even greater degree). Then there is the issue of what the failure to refind a species in an area as large as a hectad, an area of 10,000 hectares, 'means'. Generally speaking, the answer may be 'not much'. This issue can only be overcome by statistical analysis to a modest degree. Some important broad trends can be teased out of such data but only as to how some groups of species have fared relative to other such groups. It is the word 'relative' that is crucial. Because of the different coverage of the surveys no estimates of absolute change are possible. One cannot demonstrate that wildflowers as a whole are in retreat, just that some groups are doing better or worse than others. The coarse mapping scale is also a problem because most relatively widespread species are just too common to show decline: even if a sizable proportion of their colonies in a hectad are lost others will remain, so no change will be registered. However what is true about decline is not true about spread. The BSBI Atlases do illustrate very graphically the remarkable recent spread of a limited number of native and alien species.

Part of the solution is to turn to finer spatial scales. The repeat-recording of small fixed plots is capable of revealing change with a fair degree of certainty. The Government-funded 'Countryside Survey' has done just this. Excellent statistics are now available over various periods of time of landscape issues such as the number of hedges grubbed up and of the new ones planted, but only a very little has become available on trends in individual species of plants. One learns that nettles have indeed been increasing, just as one had thought from one's strolls down country lanes, but not much more. Most of the 'interesting' species like primroses are just not common enough at plot scale for trends to be apparent.

The BSBI atlases do demonstrate adequately a sad absolute decline for some of the rarest species. These typically have only a single population in a hectad where the species is present. For some of these rarities, but by no means all, the individual populations have been monitored on a more or less regular basis over the years. This success gave me a pointer as to how to approach the study of decline in Berwickshire.

Methods

My recording plan for the repeat survey of Berwickshire involved resurveying each hectad on the same rotation as in the 1987-1999 survey, so that there was, on average, sixteen years between surveys. One module of the plan was to refind as many as possible of the populations of scarce species (species that are rare or scarce in Berwickshire as defined in my *Berwickshire Rare Plant Register* 2004) on a site-by-site basis and to search for others, recording fine-scale detail of the populations found.

Sites have been defined as far as possible by coherent management units. Most are considerably smaller than 1km^2. Many sites fit within a single 'floating' 1km square (not bounded by fixed gridlines) but the more linear sites may be 2km or so long. Large blocks of similar habitat have been subdivided into two or more sites. A plant population that extends into two such subdivisions has been treated as two populations, so 'population' and 'site' have the same definition.

Many populations searched for have not been refound and much thought has been given to whether they have been lost or merely overlooked, so that this could be taken account of in analysis by scoring the probability of populations having been overlooked.

A first stage has been to eliminate those species that are casual (such as coastal species only intermittently present on beaches) or critical (and thus inconsistently recorded in Berwickshire) and then to focus on species that are 'site-faithful', at least in the fragmented habitats of Berwickshire over a sixteen year period, so that colonisation can be ignored as immaterial (this 'site-faithful' concept would not hold at finer scales, such as 100m or 10m, as many of the populations do fluctuate at fine scales). 448 populations of 122 scarce species selected from those listed in the Rare Plant Register as meeting the 'site-faithful' criterion have been resurveyed and the results are analysed. A few populations of otherwise 'site-faithful' species were discarded as being known introductions or suspected casuals. All populations of a further 23 native scarce species were discarded as 'mobile' with material colonisation in the period (often of man-made habitats such as forestry roads). All the archaeophytes were discarded for similar reasons.

The second stage, to review of potential population losses to separate the real losses from populations overlooked, has been unashamedly subjective, though the review has been approached as systematically as possible. A scoring system has been used to limit the impact of subjective judgement: 1 for a refind, 0 for clear evidence of loss and ¾, ½ and ¼ for cases where it was considered more or less likely that a population had been overlooked. There is the further problem that the plants in a population cannot be assumed to be distributed within a site just as they were sixteen years or so previously. Not only may numbers vary from year to year in response to the weather but the habitat gaps they exploit may close in some places and open in others. This is a particular problem for species which exploit mud beside ponds, lochs, burns and rivers such as *Rumex conglomeratus* Clustered Dock and *R. maritimus* Golden Dock. Even if a 1km stretch of such a habitat has been thoroughly searched at a suitable season without success, it has often been inappropriate to score less than ½ recognising some probability that the species will reappear in future. Often it has been all too obvious that the habitat has changed and that the failure to refind a population represents a real loss with score 0.

Survey results 1987-2013

Analysis of the repeat survey, table 1, demonstrates an average loss of populations of scarce species of a disastrous 21% over the sixteen year period between surveys or 14% per decade, which is equivalent to half the populations being lost in 46 years. Losses in SSSIs are compared with those in the wider countryside. While losses of populations in SSSIs have been very substantial they are only about half as severe as those in the rest of the countryside.

It must be stressed that the results are averages over very dissimilar species, some of which have suffered severely, some hardly at all.

Table 1: Losses of populations of scarce species by conservation status 1987-2013

Status	Spp.	Popul^{ns}	Losses	*%Loss/ decade*	*95% Conf.*	Half-life Years
SSSIs	82	156	20.75	*9*	*± 3*	77
Other	98	292	74.00	*17*	*± 3*	37
All	**122**	**448**	**94.75**	***14***	**± 2**	**46**

As all the sites have been rated for their botanical interest in my *Berwickshire BSBI Site Register* 2013, it is instructive to analyse them by those ratings, table 2. The classification used was a subjective one, related to species-richness and the continuity of natural vegetation types, as follows: 5, habitat outstanding; 4, habitat excellent; 3, habitat fine; 2, habitat good; 1, habitat moderately good; 0, habitat fragmentary. Table 2 suggests a neat progression with the most severe losses in the most fragmented habitats.

Table 2: Losses of populations of scarce species by site rating 1987-2013

Site Rating	Sites	Hectares	Spp.	Cum. Spp.	Popul^{ns}	Losses	*%Loss/ decade*	*95% Conf.*	Half-life Years
5	9	395	30	30	36	4.75	*9*	*± 6*	77
4	12	477	46	61	65	8.75	*9*	*± 5*	76
3	40	1,545	63	93	103	15.50	*10*	*± 4*	67
2	79	3,637	66	112	109	22.00	*13*	*± 4*	49
1	93	3,209	42	117	66	20.00	*20*	*± 6*	30
0	-	-	46	122	69	23.75	*23*	*± 7*	26
Total	**233**	**9,263**	**122**	**122**	**448**	**94.75**	***14***	**± 2**	**46**

Causes of losses 1987-2013

An advantage of working with discrete populations is that the causes of losses can often be deduced with reasonable confidence.

Excluding the losses for which the causes are unknown (20% of the total), 32% of the remaining losses have been due to physical disturbance (mostly agricultural or forestry operations but also muirburn), 35% to eutrophication, 16% to under-grazing (or the exclusion of cattle from water), 16% to natural causes (mostly vegetation succession in wetlands, accelerated by earlier drainage nearby) and just 1% to competition by invasive species (native *Rubus* Bramble and neophyte *Centranthus* Red Valerian). Habitat fragmentation lies behind many of these immediate causes. Storm damage on coastal beaches is identified (under natural causes) as the likely reason for the loss of a few populations. This suggests that there is a case for treating all species of coastal beaches as mobile.

The positive effects of climate change are observable in Berwickshire in the recent spread of some ferns such as *Polystichum setiferum* Soft Shield-fern, a scarce species excluded from the analysis as mobile, but any negative effects are not separable in the field from other factors, and losses from any such effects are likely to have been classified under eutrophication.

My perspective of the key issues in the continuing sad decline of the species-diversity in the botanical sites of Berwickshire may be summarised as follows:

1. Many sites are small and vulnerable to what happens nearby, especially with regard to eutrophication. We inherit this habitat fragmentation from the past.
2. Little species-rich grassland is favourably managed. Some is fenced off allowing coarse grasses and scrub to take over. Some suffers from fertiliser application.
3. The notable aquatic flora of the River Tweed is not respected, causing species that were formerly frequent to become scarce. The fishing interests, with few exceptions, do not exercise restraint in their weed-cutting.
4. Herb-rich moorland burnsides are too often not spared the cycle of muirburn.
5. The policy of excluding cattle from watersides has been taken too far.
6. Well-intentioned new ponds are too often dug at the cost of valuable wetland and conservation tree planting carried out at the cost of valuable grassland.

Axiophytes and more widespread native species 1987-2013
This presentation analyses losses of scarce plants. Nevertheless it is instructive to consider, however roughly, what the results imply for the losses of more widespread species.

Excluding critical species, hybrids and subspecies, the native species present in Berwickshire may be divided into three main groups, the scarce species discussed above, the axiophytes and the more widespread species. The axiophytes are a group of 132 species considered to be indicators of natural habitats and thought to be present in no more than 15% of Berwickshire monads.

As noted above, the Berwickshire surveys were carried out at monad scale but did not include any systematic resurvey of monads. In these circumstances it is not possible to carry out a statistical analysis of the results with a view to obtaining an estimate of the average rate of decline at monad scale of axiophytes or more widespread native species. Instead a crude exercise has been carried out by viewing the distribution maps of the axiophytes and judging losses subjectively using field experience and knowledge of whether individual monads had been resurveyed or not. It was at once evident that there has been a wide variation in fortune between species at monad scale, with some species in decline and many with no observable change. A very few species show gains, often related to the colonisation of man-made habitat, such as forestry roads. The results of this review, table 3, offer no more than order-of-magnitude estimates but emphasise the need for survey at scales finer than 1km if declines in axiophytes and yet more widespread species are to be evaluated. For these more widespread species there are too many populations per monad for the losses of a few populations to lead to significant change at monad scale even if their fine-scale losses were to have been at rates comparable with scarce species. This has been confirmed by crude modelling where the coarse-scale losses for these more widespread species were found not to be very sensitive to the underlying fine-scale rate of loss.

Table 3: Berwickshire losses at coarse spatial scales by species group

Species group	***% Net loss/decade***	
	Monads	*Hectads*
Site-faithful scarce species	*14*	*11*
Axiophytes	*2½*	*1*
Other native species	*1*	*½*

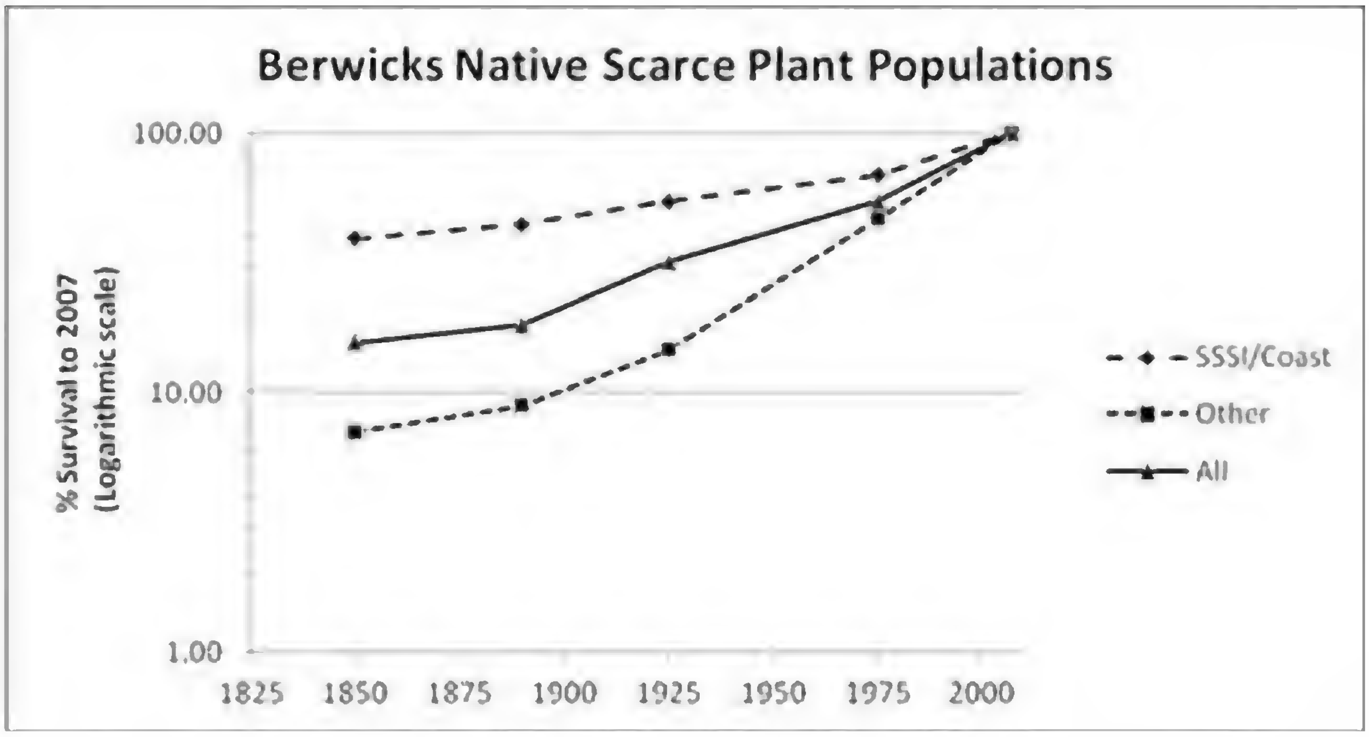
Historical records 1828-1999

The above analysis compares the 1987-1999 survey with the repeat survey completed in 2013. I have carried out a further analysis on a very similar basis with historical records of scarce plant populations. The historical records were divided between four dateclasses related to the history of botanical recording in Berwickshire, 1828-1869, 1870-1909, 1910-1939 and 1940-1999. Presence in the most recent survey was attributed to 2007, the average date of the records in the dateclass. Average dates were ascribed to the records of earlier dateclasses in the same way. The populations were further divided between those in SSSIs or on the coast (where their losses have been at a rate similar to those in the SSSIs) and the rest. This allows the losses for each of the dateclasses to be calculated, table 3. Note that the losses are measured from the average date of the dateclass to 2007 in all cases, as no comprehensive resurvey had been carried out at an earlier date.

Table 3: Losses of populations of scarce species by dateclass

Dateclass	Average date	% Losses to 2007			% Survival to 2007		
		SSSI	Other	All	SSSI	Other	All
1828-1869	1850	61	93	84	39	7	16
1870-1909	1890	56	91	82	44	9	18
1910-1939	1925	46	85	68	54	15	32
1940-1999	1975	31	53	46	69	47	54
2000-2013	2007	0	0	0	100	100	100

Trends in population losses over time are most easily presented in chart form in relation to the percentage survival rather than the percentage losses (where percentage survival = 100 - percentage losses) as below:



By plotting the percentage survival on a logarithmic scale in the chart it becomes more apparent that there have been substantial losses over all dateclasses with a strong suggestion of an increased rate of loss in recent decades. However the severity of the losses suffered by the populations first recorded in the early dateclasses is most easily appreciated from table 3.

Again, it must be stressed that the results are averages over very dissimilar species, some of which have suffered severely, some hardly at all.

Berwickshire's SSSIs: change over 35 years

Introduction

This subsection explores the interrelation of the severe losses of rare or scarce species reported above with more general changes in the vegetation, bringing together many matters of concern noted elsewhere in this '*short Flora'*. The Berwickshire SSSIs are selected as a sample for individual review. Such a sample excludes most small habitat patches where favourable management is not a realistic ideal. The Berwickshire SSSIs were first notified in two batches, one in 1949 and one in 1981. I have recorded in these SSSIs over 35 years visiting them in three date-classes, 1969-1986, 1987-1999 and 2000-2013 and have compiled earlier records. I have not made systematic site reports after each visit, except for the modest ones incorporated into the 2013 *Site Register*; so much of the comment offered here is based on personal perceptions.

The dates of last record of species thought to be extinct at a site are given in the form (†1987).

Berwickshire Biological SSSIs	Hectad NT	First notified	Area ha	Habitat
Coldingham Loch	86	1981	16.5	Aquatic
River Tweed (part of 2,674.6 ha)	various	1949	c. 500.0	Aquatic/riverside
Burnmouth Coast	95, 96	1949	159.3	Coast
St Abbs Head to Fastcastle	86, 87 96	1949	248.0	Coast
Pease Bay Coast	77	1949	69.2	Coast
Crook Burn, Longformacus	65	1981	8.0	Grassland
Greenlaw Moor	64, 65, 74, 75	1949	1,173.0	Moorland/wetland
Bemersyde Moss	63	1981	23.9	Wetland
Drone Moss	86	1981	23.2	Wetland
Gordon Moss	64	1949	43.3	Wetland
Long Moss, Coldingham Common	86	1981	46.7	Wetland
Lurgie Loch	63	1981	11.8	Wetland
Abbey St Bathans Woods	76	1949	63.0	Woodland
Airhouse Wood	45	1981	14.7	Woodland
Langtonlees Cleugh	75	1981	13.5	Woodland
Pease Bridge Glen	76, 77	1949	12.0	Woodland
Tweedwood to Gateheugh	53	1949	25.7	Woodland
[The Hirsel – not botanical]	83, 84	1981	92.1	Mixed

Review

The two aquatic SSSIs are the most contentious, as their recent management has not been favourable to the botanical interest. **Coldingham Loch** is the only sizeable natural loch in the county. It has a rich aquatic flora including charophytes, *Potamogeton filiformis* Slender-leaved Pondweed and *P. x nitens* Bright-leaved Pondweed. Unfortunately it has recently been managed as a put-and-take Rainbow Trout fishery and the 'weed' has been cut regularly using a specialised boat fitted with a mechanical cutter: nothing has been spared. Meanwhile the adjacent grassland, formerly species-rich but not in the SSSI, has been 'improved' and there has been a large increase in nutrients washing into the loch. Charophytes are no longer evident and the pondweeds are much reduced. *Littorella uniflora* Shoreweed is extinct (†1960). A reed bed has expanded, filling in a secluded pool which was formerly botanically-rich as well as being a sanctuary for waterfowl. The property has now changed hands and there is some hope of more sympathetic management.

The **River Tweed** and most of its principal tributaries are an SSSI which extends through four Scottish counties and one English county. The citation lists the botanical and invertebrate interest first, but in practice the overriding interest is the important salmon and sea trout fishery. Considerable steps have been taken to improve the water quality. While this is a laudable endeavour, one element of the policy has been to exclude grazing stock from the watersides. As elsewhere, this policy has been taken to extremes and has had the effect of almost eliminating the natural mud communities at the water edge which is the habitat for such species as *Rumex conglomeratus* Clustered Dock. Although only a very small part of the riverside, the steep part of the immediate river bank, is within the SSSI, large sums of money have been expended annually since 2003 to control *Heracleum mantegazzianum* Giant Hogweed in the grassland and woodland adjacent to the river. While a considerable degree of success has been achieved by the River Tweed itself, control by the largest tributary, the Whiteadder Water, has been much less effective as there are some very inaccessible habitats. There is now a suggestion that miniature drone aircraft be deployed to target these. Ironically *Allium paradoxum* Few-flowered Garlic continues to spread extravagantly and is doing very much more harm to the botanical interest in riverside woodland than *Heracleum mantegazzianum* ever did. There is no known cure.

Weed-cutting has been practised in the river for many years by the fishery interests, but its intensity has increased and on most beats nothing is spared. The future of the diverse and nationally important pondweed and water-crowfoot communities is being put at risk by the absence of a satisfactory code of practice. The losses appear to have been severe, but it is difficult to quantify them or to know how quickly re-colonisation would occur if weed-cutting was reduced. Meanwhile *Potamogeton x bottnicus* Bothnian Pondweed is endangered and *P. x cooperi* Cooper's Pondweed (†1973) appears to be extinct. In the grassland strip back from the river (admittedly outside the SSSI), management practice varies. In some beats paths are strimmed with other areas left uncut for much of the year. This is favourable to the botanical interest with such species as *Knautia arvensis* Field Scabious finding a welcome sanctuary. However on other beats all the grass is strimmed short like a lawn, to the considerable detriment of the botanical interest. Meanwhile landowners and fisheries have cooperated with the creation of a way-marked path along much of the River Tweed.

Berwickshire has a fine coastline with cliffs and steep grassy slopes, but rather few sandy beaches. Three substantial sections are SSSIs. The birdlife is spectacular, especially at **St Abbs Head NNR**, where there is now an excellent interpretation centre and ranger service. The botanical interest is considerable, but limited by the narrowness of the habitat strip as arable fields abut much of the cliff-top. There is more substantial grassland on the St Abbs Head promontory where the very sympathetic management of the grazing in recent years has much enhanced the display of *Armeria maritima* Thrift. But even there the grassland has had a chequered history with some ancient cultivation and more recent use as a golf course, so the coastal heathland has been all-but-lost and the species-rich grassland is mainly on the rocky knowes and the extreme cliff edge where there is a very large and thriving population of *Astragalus danicus* Purple Milk-vetch, curiously not mentioned in the SSSI citation. Not all the grassland species are thriving. *Filago vulgaris* Common Cudweed (†1991), *Gymnadenia conopsea* Fragrant Orchid (†1995) and *Vicia lathyroides* Spring Vetch (†1983) may be extinct and the colony of *Torilis nodosa* Knotted Hedge-parsley, the only one in the county, is under immediate threat from the spread of the neophyte *Sedum album* White Stonecrop. The cliffs boast *Minuartia verna* Spring Sandwort, *Ligusticum scoticum* Scots Lovage and *Sedum rosea* Roseroot, all of which seem secure. The SSSI continues northwards from **St Abbs Head to Fastcastle** as a narrow strip, now accessible by a long-distance coastal path. Recent losses there have been *Antennaria dioica* Mountain Everlasting (†1988), *Dianthus deltoides* Maiden Pink (†1987) and *Gymnadenia conopsea* Fragrant Orchid (†1988) due to a combination of eutrophication and lack of grazing.

Turning to the section of the coast between **Burnmouth** and the English border, there are two grassland features of particular interest. Just north of Burnmouth harbour lies a steep rocky calcareous slope with a fine display of *Primula veris* Cowslip and *Orchis mascula* Early-purple Orchid and a number of scarcer species. All is not well there: three species of Cotoneaster and native Blackthorn have colonised to such an extent that a large area of former grassland has been lost to impenetrable scrub and *Centranthus ruber* Red Valerian has invaded a further area in excess. *Astragalus danicus* Purple Milk-vetch (†1979) has been lost. Further south at Hilton Bay is another calcareous exposure on an eroding slope, home until a year or two ago to a fine colony of *Alchemilla glaucescens* Silky Lady's-mantle growing with *Sanguisorba minor subsp. minor* Salad Burnet, *Polygala vulgaris* Common Milkwort and *Primula veris* Cowslip. Above this slope runs the main east coast railway and, as the erosion was causing concern, the beach below has been built up with huge boulders and netting has been draped over the most active areas of erosion. The engineering has been all too successful: the erosion has ceased and scrub has colonised rapidly. The last remnants of this surprising grassland community will soon be lost unless action is taken. Other losses hereabouts include *Cerastium semidecandrum* Little Mouse-ear (†1979), *Daucus carota subsp. carota* Wild Carrot (†1980), *Gymnadenia conopsea* Fragrant Orchid (†1963), *Scleranthus annuus* Annual Knawel (†1960) and *Trifolium arvense* Hare's-foot Clover (†1979).

The third coastal SSSI runs north from **Pease Bay** and features a shingle beach with a fine colony of *Glaucium flavum* Yellow Horned-poppy, near the northern limit of its distribution. It is under threat from a large multi-coloured colony of *Centranthus ruber* Red Valerian. *Astragalus danicus* Purple Milk-vetch (†1998) is a recent loss.

Over recent decades there have been losses and re-colonisation from the sand and shingle beaches. It has taken me a long time to recognise these as part of an ongoing cycle related to storms. Species affected include *Beta vulgaris subsp. maritima* Sea Beet, *Cakile maritima* Sea Rocket, *Parapholis strigosa* Hard-grass, *Salsola kali* Prickly Saltwort and *Suaeda maritima* Annual Sea-blite. *Crambe maritima* Sea-kale has colonised two sites, including St Abbs Head, since 2008: it had last been seen in the county in 1836.

Away from the coast the only grassland SSSI is a strip by the **Crook Burn** near Longformacus cited as a ‘northern hay meadow’ with *Trollius europaeus* Globeflower and *Cirsium heterophyllum* Melancholy Thistle. While these species are indeed present in a series of flushes at a strong spring-line above the burn, hay meadow is something of a misnomer. Today the SSSI is an ungrazed strip at the edge of a large field of ‘improved’ grassland. It may indeed have once been a hay meadow at a time when *Listera ovata* Common Twayblade (†1980) was still present and *Coeloglossum viride* Frog Orchid (†1947) was close at hand (and mistakenly thought to occur on site).

Greenlaw Moor is much the largest SSSI in Berwickshire. The westernmost part is a very fine raised bog hemmed in by an amazing geological feature, the sinuous Greenlaw Kaims. The bog supports a good population of *Trichophorum cespitosum subsp. cespitosum* Northern Deergrass as well an abundance of the hybrid with *T. c. subsp. germanicum* Common Deergrass. It is in surprisingly good condition but is now threatened with invasion by Sitka Spruce from recent afforestration nearby. To the east the site is crossed by the Fangrist Burn. The burn has a rich aquatic flora for its altitude, though *Ranunculus circinatus* Fan-leaved Water-crowfoot (†1989) has been lost recently both here and throughout this river system. The burnsides and adjacent flushes have a varied flora that includes *Blysmus compressus* Flat-sedge, though sadly the best colonies are downstream, beyond the site boundary. To the east again is Greenlaw Moor itself, where a small reservoir is notable for its wintering flock of Pink-footed Geese. Botanically this is moorland at its worst, as the cycle of muirburn optimised for grouse has gradually eliminated almost all diversity, with the last plants of *Platanthera bifolia* Lesser Butterfly-orchid (†2000) and *Genista anglica* Petty Whin (†2002) apparently eliminated recently. Other losses have been *Listera cordata* Lesser Twayblade (†1968), *L. ovata* Common Twayblade (†1980), and *Sedum villosum* Hairy Stonecrop (†1952). It is sad that a code of muirburn practice has not been developed to foster wider diversity.

Bemersyde Moss with its mire and open pools is more of an ornithological site than a botanical one and is an SWT reserve well served by a bird observation hide. *Bidens cernua* Nodding Bur-marigold is the local rarity and it prospers. Recent losses or impending losses relate to species of wet grassland, a habitat only marginally represented in the site, and are *Sanguisorba officinalis* Great Burnet (†1989) and *Silaum silaus* Pepper-saxifrage (†2003). One can surmise that they were formerly more plentiful in the surrounding fields before they were drained at unknown dates. So the losses reflect the history of the wider countryside rather than management shortcomings. Other losses are *Scutellaria galericulata* Skullcap (†1974) and *Sparganium emersum* Unbranched Bur-reed (†1978) but these have been offset by the recent colonisation of *Cicuta virosa* Cowbane (2002+) and *Rorippa islandica* Northern Yellow-cress (2003+).

Drone Moss was notified as a raised moss and it is indeed a large dome of heather-covered peat. Sadly only a vanishingly small part of it at the margin holds active *Sphagnum* moss with a little *Vaccinium oxycoccus* Cranberry. *Drosera rotundifolia* Round-leaved Sundew (†1979) appears to have been lost. The centre of the moss has been cut over and burnt in the past and restoration would now be a major project, so the botanical interest lies in the surrounding carr woodland which is still species-rich. Curiously the SSSI excludes flushes on an adjacent bank with a good colony of *Trollius europaeus* Globeflower. There is a caravan park adjacent to the moss where *Rhododendron* has been planted. This is now invading the moss explosively and has begun to overwhelm the *Trollius* as well.

The story of **Gordon Moss** is something of a classic. It was once a long and varied wetland of nearly three hundred hectares, much visited by Victorian naturalists. There had been peat cutting over a long period, then a railway was built through it, the burn was canalised and deepened and some parts were cultivated. By 1949 the most intact section surviving were the former peat cuttings of the Feuars Bog where orchids abounded including *Corallorhiza trifida* Coralroot Orchid and *Platanthera bifolia* Lesser Butterfly-orchid. This part of the moss became first an SSSI and then an SWT reserve largely on the strength of its orchids. There was a major drainage scheme to adjacent land in the 1970's which was not opposed by the Nature Conservancy Council. Meanwhile birch had invaded the drying site and it is now the largest wet birchwood in the Scottish Borders but the raised mire for which the site was notified is no more. Many of the plant rarities have been lost over a long period. Recent losses are *Drosera rotundifolia* Round-leaved Sundew (†1993), *Dactylorhiza incarnata* Early Marsh-orchid (†1982), *Ranunculus lingua* Greater Spearwort (†1976), *Sparganium natans* Least Bur-reed (†1982), *Stellaria palustris* Marsh Stitchwort (†1993), *Utricularia minor* Lesser Bladderwort (†1974) and *Vaccinium oxycoccus* Cranberry (†1960). Both *Coralorhiza trifida* Coralroot Orchid and *Platanthera bifolia* Lesser Butterfly-orchid are now in danger. The first requires shade, the second open glades: so there has been much agonising as to where glades should be cut.

Long Moss has a somewhat similar story. It too is a Feuars Bog cut over for peat with *Corallorhiza trifida* Coralroot Orchid and *Platanthera bifolia* Lesser Butterfly-orchid in the peat cuttings, but, unlike Gordon Moss, it has not been drained and there are some horrendous peat holes which were formerly refugia for *Vaccinium oxycoccus* Cranberry. This species has now declined dramatically, for reasons that are unclear, as have the two orchids mentioned above, both of which could now be lost. Recent losses have been *Gymnadenia conopsea* Fragrant Orchid (†1988) and *Listera cordata* Lesser Twayblade (†1979). There is now a real threat of invasion by Sitka Spruce from a neighbouring plantation, a planting SNH did not have the powers to resist.

Lurgie Loch is a further wetland where vegetation succession has been at work. Long ago the loch gave way to a mire, part of which was topped by a *Sphagnum* bog that has more recently been colonised by birch and willows. *Vaccinium oxycoccus* Cranberry (†1999) is a recent loss. Species now in danger include *Stellaria palustris* Marsh Stitchwort, *Corallorhiza trifida* Coralroot Orchid and *Pyrola minor* Common Wintergreen, the last a relatively recent colonist under pines which may or may not have been planted on the drying bog. I have been lobbying against a proposal to clear most of the trees from the wetland rather than more selective felling as I do not believe that the former mire communities would recover from major disturbance, not least as the site is surrounded by arable land and 'improved' grass.

Berwickshire lost almost all of its woodland in the centuries of border strife, so the SSSIs try to make the best of the remnants. The **Abbey St Bathans woods** are a series of separate woods along the Whiteadder Water. They are of oak with a little juniper and some more diverse communities at the riverside where *Prunus padus* Bird Cherry is prominent. Such communities are not rich in scarce species. A casualty has been *Melampyrum pratense* Common Cow-wheat, widespread in these woods until recently, but now reduced to a single modest colony. *Ranunculus auricomus* Goldilocks Buttercup has declined similarly and *Pyrola minor* Common Wintergreen (†1970) appears lost. Eutrophication is probably to blame, at least for the *Melampyrum* losses, whether from atmospheric deposition or from run-off from the fields above, where moorland once abutted the woodland. *Doronicum pardalianches* Leopard's-bane is rampant in some of the woods. The juniper has recently been reinforced by plantings after an experiment of introducing pigs to promote the regeneration of oak and juniper failed as it led only to the spread of undesirables, particularly *Chamerion angustifolium* Rosebay Willowherb.

Airhouse wood is an upland birch wood with a little juniper, but was formerly more diverse. Here there has now been an extensive and well-planned planting scheme, mainly of oak and juniper. There have been no recent extinctions.

Langtonlees Cleugh is a fine upland feature with diverse woodland in a narrow gorge. It was formerly set in moorland and some of the losses relate to moorland and wetland species for which vanishingly little habitat remains. The woodland species lost are *Neottia nidus-avis* Bird's-nest Orchid (†1953), *Phegopteris connectilis* Beech Fern (†1958) and *Pyrola minor* Common Wintergreen (†1963). *Ranunculus auricomus* Goldilocks Buttercup has not been seen since 1995.

The **Pease Burn** woodlands in a coastal dean are all that is left of formerly extensive native woodlands, mainly of oak, much of which was felled in the First World War and later planted with conifers. There is a history of disturbance. Many of the recent losses have been just outside the SSSI, though within an SWT reserve, and relate to fragments of grassland towards the sea that are no longer managed as such and have scrubbed over. *Polystichum setiferum* Soft Shield-fern, a local rarity, has recently increased dramatically but *Orchis mascula* Early-purple Orchid appears to be declining and is now at risk from an ongoing invasion by *Allium paradoxum* Few-flowered Garlic.

On the River Tweed below Leaderfoot the **Tweedwood to Gateheugh** woods have a mixture of ash and elm on the richer soils and oak downstream on a rocky slope. Between the two there is a geological intrusion of calcareous rock with *Sorbus rupicola* Rock Whitebeam and other rarities. Recent losses here include *Melica nutans* Mountain Melick (†1983). The riverside has many neophytes, with *Allium paradoxum* Few-flowered Garlic rampant.

A final biological SSSI in the mansion house parkland of **The Hirsel** is outside the scope of this review as it was notified for its diversity of breeding birds, though it also has a diverse flora.

Potential SSSIs

Meanwhile I consider the SSSI series to be incomplete but I have had no success with proposals for further designations. Six further Berwickshire sites are potential SSSIs: (i) Hareheugh Craigs 10.4 ha, a grassland site with *Dianthus deltoides* Maiden Pink on the Kelso Traps intrusive rocks, (ii) Longmuir Moss 16.6 ha, a valley mire with a rich mosaic of habitats, (iii) Lumsdaine Dean and Dowlaw Moss 72.4 ha, a wetland and grassland mosaic adjacent to other SSSIs, (iv) Cromwells 11.2 ha, wood pasture with *Crepis mollis* Northern Hawk's-beard, (v) Wheel Burn 139.8ha, a series of base-rich flushes along a burnside and (vi) Hells Cleugh 207.6ha, a series of base-rich flushes set in favourably managed moorland.

Discussion

This review of Berwickshire's SSSIs raises many issues, but first it is as well to applaud the initiative that gave us the SSSIs. They have undoubtedly contributed greatly to wildlife conservation in the county, as elsewhere. As to the issues, a number of threads can be drawn (some repeated from the statistical subsection):

1. Given the fragmentation of habitats that had occurred long before the first of these SSSIs were notified in 1949, further change was inevitable and is ongoing. In particular the natural vegetation succession of wetlands has been dramatically speeded up by the long-term effects of nearby drainage and the narrow coastal strip has proved vulnerable to the effects of eutrophication from fields above.
2. Some issues could have been avoided if suitable powers and funding had been available and it is not too late to address them. These include (i) excessive water-weed cutting by fishery interests, (ii) excessive fencing to exclude livestock from watersides, (iii) unrestrained muirburn by grouse shooting interests, (iv) lack of scrub control on grassland and wetland including Cotoneaster, Rhododendron and Sitka Spruce, (v) lack of grazing especially on the coastal grasslands and (vi) new conifer forestry adjacent to wetlands.
3. Management successes have included the modified grazing regime at St Abbs Head NNR and the tree planting at Airhouse Wood. Meanwhile the resources directed to Giant Hogweed control might be considered disproportionate, despite the degree of success achieved.
4. Further successes are the improved visitor facilities: the interpretation centre and ranger service at St Abbs Head NNR, the long-distance coastal path, the way-marked paths by the River Tweed and the SWT bird hide at Bemersyde Moss.
5. Proposals for further SSSI designations are impeded by the lack of political will.

Conclusion

Berwickshire is not a botanically rich county. Nevertheless it has much to offer and the issues facing its flora are similar to those over much of Britain. The scale of the continuing losses of entire populations of species that are locally rare or scarce is startling and SSSIs are not immune. The over-riding impression is of habitats losing diversity. Much of the damage relates to long-term issues largely beyond the control of conservationists, especially habitat fragmentation and eutrophication. But there is also a sad failure to tackle the achievable: with the lack of political will more of an issue than the relatively modest funding needs.

9. References and bibliography

With annotations in square brackets [ ]

Aiken, J J M L, 1910, Gatherings from the flora of Coldingham, in Anon (ed.), *Coldingham and St Abb's*, being the golf bazaar guide to the district, H & J Pillans & Wilson, Edinburgh

Aiken, J J M L, 1922, Presidential address: An itinerary of the stations of the less common plants in the Club's area, *HBNC* **24**: 353-363

Allan, R, and Candlish, I, eds., 1988, *The Scottish Borderland – The Place and the People*, The Border Country Life Association, Kelso [A fine overview of the history and geography of the area]

Anderson, A, 1914, List of the less common plants in the area of the Club, *HBNC* **22**: 227-272

Authors, various, 1989-2013 in the *Journal of the Edinburgh Natural History Society* [Field meeting reports including those led by M E Braithwaite, N Crowther and J Muscott]

Authors, various, 1831-2013, in: *HBNC* (*History of the Berwickshire Naturalists' Club)*, The Berwickshire Naturalists' Club, Berwick-upon-Tweed. For indices to botanical papers see: 1831-1931, Centenary Vol., 90-95; 1932-1980, Sesqiucentenary Vol., 121-129 [The principal papers are listed separately above and below in this references section, but not the short notes, field meeting reports or lists of botanical records]

Authors, various, (the ministers of the respective parishes), 1841, *The New Statistical Account of Berwickshire,* William Blackwood and Sons, Edinburgh [Some ministers included accounts of the botany of their parish]

Authors, various, *The correspondence of N J Winch (1768 – 1838)*, manuscripts held by the Linnean Society of London

Badenoch, C O, *HBNC (History of the Berwickshire Naturalists' Club)*
- 1980, A tale of two mosses (Coldingham and Drone), **41**: 259-263
- 1991, Hareheugh Craigs, **45**: 161-164
- 1994, Border woodlands: 1 – Berwickshire, **46**: 115-133

Barwell-Carter, J, and Hardy, J, (eds.) 1892, *Selections from the correspondence of Dr George Johnston*, David Douglas, Edinburgh

Braithwaite, M E, *HBNC (History of the Berwickshire Naturalists' Club)*
- 1988, The Botanist's Scotland – Berwickshire, **44**: 103-107 [Reprinted from the newsletter of the Botanical Society of Edinburgh]
- 1999, A H Evans's 'A Flora of the Tweed Area', **48**: 35-46
- 2003, 200 years in the history of Berwick's wild flowers, **49**: 106-139 [Repeat survey of J V Thompson's *Catalogue* 1807] [This paper gave rise to a leaflet published by the Club: *A history and guide to Berwick's wild flowers*]
- 2005, Presidential address: The Club's contribution to our knowledge of the botany of Berwickshire, **50**: 5-19
- 2006, The Flora of St Abbs Head – thirty years of conservation, **50**: 98-108
- 2007, The changing habitats of Clubmosses in Berwickshire, **50**: 178-181
- 2008, The Berwick Grammar School Herbarium, **51**: 22-31 [F Brady's herbarium]
- 2008, The 'Berwickshire County Botanical Record', **51**: 32-43 [Record kept by the Wild Flower Society]
- 2010, Berwickshire BSBI Botanical Site Register, **51**: 166-168 [Note re provisional edition]
- 2011, William Hall of Whitehall, **52**: 31-34 [Died 1800, *Rubus nessensis* W. Hall]
- 2011, The Berwickshire High School Herbarium, **52**, 35-56 [F M Norman's herbarium]
- 2011, Long-established herbal plants of the River Tweed, **52**, 59-63 [Including Henbane]
- 2011, Curiosities of the boundary on the River Tweed, **52**, 64-67 [Islands in the Tweed]
- 2012, Incomers to the Flora of Berwickshire and their habitats, **52**, 165-174 [Prominent neophytes]

2012, A long-established Berwickshire population of Cornflower *Centaurea cyanus*, **52**: 175

Braithwaite, M E, *Watsonia* [Journal of Botanical Society of the British Isles]

1981, Duns, Berwickshire, 1979 (Field Meeting Report), **13**: 257-258 [7-14 July]

1985, Lauderdale and Cockburnspath, Berwickshire, 1983 (Field Meeting Report), **15**: 301-302

2001, *Alchemilla glaucescens* Wallr. in v.c. 81 Berwickshire, **23**: 449-451

2004, *Tofieldia pusilla* (Michx.) Pers. at the Scottish border, **25**: 207-208

2010, Presidential address: How well has BSBI chronicled the spread of neophytes? **28**: 21-31 [Includes examples from Berwickshire]

2010, Berwickshire's disappearing scarce plants, **28**: 129-140

Braithwaite, M E, *BSBI News* [Botanical Society of the British Isles (from 2013 Botanical Society of Britain and Ireland)]

1987, Berwickshire 1986 (Field Meeting Report), **46**: 41 (with Howarth, CC) [*Taraxacum*]

1988, Nature has the last laugh? (*Catabrosa aquatica*), **48**: 23-24 [Gordon Moss]

1991, The Scottish Cabbage Patch: New Zealand Bittercress, *Cardamine uniflora,* **58**: 38-39 [*Cardamine corymbosa* at Silverwells, Coldingham]

1992, Change at local level – v.c.81, Berwickshire (BSBI Monitoring Scheme), **61**: 16-19 [Gordon area, statistical]

1995, Coldingham, Berwickshire (v.c.81) 1994, (Field Meeting Report), **68**: 63-64 [Eyemouth to Coldingham]

2000, Greenlaw, Berwickshire (v.c.81) 1998 (Field Meeting Report), **84**: 71

1997, Mega spread for micro plant? **77**: 38 [*Sagina maritima* on roadsides salted in winter]

1999, Berwickshire (Near Berwick-upon-Tweed) 1999 (Field Meeting Report), **82**: 65-66 [Lamberton undercliff, Manderston]

2001, Hareheugh Craigs, Berwickshire 2000 (Field Meeting Report), **86**: 63-64

2002, Berwickshire (Greenlaw) 2002 (Field Meeting Report), **91**: 71 [Greenlaw Dean, Dogden Moss]

2003, A Crucifer with 'no flowers to speak of' – cleistogamy and prolifery in *Cardamine corymbosa* (New Zealand Bitter-cress), **92**: 14-16

2004, Hedgerow hawthorns discovered, **97**: 21-22 [Jizz characters for identification]

2007, Abyssinian Mustard, a naturalised crop? **104**: 36-37 [*Crambe hispanica*]

2007, A wizard's weeds? – The poisonous baggage of Soya Bean hull, **104**: 39 [*Datura stramonium* (Thorn-apple) and other introductions]

2008, *Poa palustris* by the River Tweed, **107**: 10-11

2008, Berwickshire (Gordon area & River Tweed) 2007 (Field Meeting Report), **107**: 57-58 [Gordon Moss and aquatic species of Blackadder Water and River Tweed]

2009, The 'County Records' scheme of the Wild Flower Society, **110**: 38-39

2009, The habitat of *Cochlearia megalosperma* naturalised in Britain, **112**: 29-30 [Tweedmill, Berwickshire on a riverside cliff dripping with water]

2010, A wake-up call for the future of Britain's montane flora? *Sedum villosum* in decline in Berwickshire (v.c. 81), **115**: 15-17

2012, What can a vice-county recorder expect to learn from the study of herbaria? **120**: 50-53 [F M Norman herbarium]

2013, The status of *Mycelis muralis* in Scotland, **122**.19-21 [An archaeophyte in Berwickshire]

2013, Sunflowers on walls, **122**.38 [Seed cached by Coal Tits]

2013, 'Time travel'- modelling the historical distribution of *Sedum villosum* in Berwickshire, **123**.41-43

2013, Where is Butterbur native in Britain, **124**.23-26 [An archaeophyte in Berwickshire]

2014, What bindweeds are native in Scotland? **126**.13-16 [*Convolvulus arvensis* an archaeophyte in Berwickshire, *Calystegia sepium* a neophyte in Berwickshire]

2014, Berwickshire's scarce plants: spatial scale in the study of decline [In the press]

Braithwaite, M E, 2004, *Berwickshire vice-county Rare Plant Register* (together with a check-list of vascular plants), privately circulated, Hawick

Braithwaite, M E, 2011, *Berwickshire BSBI Botanical Site Register* (provisional edition), privately circulated, Hawick

Braithwaite, M E, 2012, *The wildflowers of a Berwickshire bard (George Henderson of Chirnside, 1800-1864)*, The Berwickshire Naturalists Club, Berwick-upon-Tweed

Braithwaite, M E, 2013, *Berwickshire BSBI Botanical Site Register,* privately circulated, Hawick

Braithwaite, M E, Ellis, R W, and Preston, C D, 2006, *Change in the British Flora 1987-2004*, Botanical Society of the British Isles, London

Braithwaite, M E and Long, D G, 1990, *The Botanist in Berwickshire*, The Berwickshire Naturalists Club, Berwick-upon-Tweed

Braithwaite, M E and Rideout, K J, 2006, *St Abbs Head NNR – An annotated check-list of the flowering plants and ferns,* privately circulated, Hawick

Carr, A A, 1836, *A history of Coldingham Priory,* Adam and Charles Black, Edinburgh [Chapter 'Botany', pp 183-195]

Coppins, A M and Long, D G, 2012, Basalt outcrops in south-east Scotland – an overlooked wealth of treasures, *British Wildlife* **23**:168:178

Corner, R W M, 2006, Michael E Braithwaite, profile, *BSBI News* **103**: 53-54

Chessell, A, 2011, *The braw trees of Coldstream*, Lulu Publishing, Farnham [Veteran trees]

Druce, G C, and Evans, A H, 1907, 1910, 1911, Notes on plants found in the Tweed Area, *Annals of Scotish Natural History,* 1907: 97, 1910: 42, 1911: 97.

Evans, A H, 1911, *A Fauna of the Tweed area*, David Douglas, Edinburgh [Includes biographical notes on Border naturalists and an extensive geographical description of the area]

Evans, A H, 1916, Notes on plants found in the district visited by the Berwickshire Naturalists' Club, *HBNC* **23**: 217-235

Evans, A H, 1943, *A Flora of the Tweed Area,* unfinished manuscript held by Royal Botanic Garden, Edinburgh

Gibb, R S, 1927, *A farmer's fifty years in Lauderdale*, Oliver and Boyd, Edinburgh [Includes an account of floristic change in grassland]

Greig, D C, 1988, *Geology of the Eyemouth district,* British Geological Survey, HMSO, London

Greville, R K, 1824, *Flora Edinensis*, William Blackwood, Edinburgh

Hayward, I M, and Druce, G C, 1919, *The adventive Flora of Tweedside*, T Buncle, Arbroath

Henderson, W G, 2009, *Merse Local Rhymes and other poems by George Henderson 1800-1864,* Eskbank Books, Edinburgh

Holmes, N T H, and Whitton, B A, 1975, Macrophytes of the River Tweed, *Trans Bot Soc Edin* **42**: 369-381, Submerged Bryophytes and Angiosperms of the River Tweed, *Trans Bot Soc Edin* **42**: 383-395 [Report of a survey of epic proportions]

Jefferson-Davies, C. and Snow, E, 2008, *Creating Paxton*, Paxton Trust and Buncle Family History Society, Chirnside

Johnston, G, 1829, 1831, *A Flora of Berwick-upon-Tweed*, J Carfrae and Son, Edinburgh and Longman, London

Johnston, G, 1848, On the discovery of *Anacharis alsinastrum* in Berwickshire, *HBNC* **2**: 287-289 [*Elodea canadensis*]

Johnston, G, 1853, *The Natural History of the Eastern Borders*, J van Voorst, London

Kelly, I A, and Shaw, W, Botany, in Thomson, A, 1902, *Lauder and Lauderdale,* Galashiels, Craighead Bros. [Chapter 31, pp 313-341]

Lowe, A, 1794, *General view of the agriculture of the county of Berwick*, B Millan, London

Lunn, A G, (ed.), 1983, *A history of naturalists in north east England,* Department of adult education, University of Newcastle upon Tyne

Mercer, J and A (eds.), A natural history of Lauderdale, in McLeish, N, and Mackay, F (eds.) 2002, *Lauderdale in the 20th century,* Lauderdale Development Forum, Buccleuch Printers, Galashiels [pp 345-386]

Muirhead, G, 1889, *The Birds of Berwickshire*, David Douglas, Edinburgh [General description of Berwickshire in the introduction]

Parry, M L, and Slater, T R, (eds), 1980, *The making of the Scottish countryside*, Croom Helm, London [Includes studies from the Lammermuirs]

Perring, F H, 1963, Duns, Berwickshire July 30-August 6, 1960 (Field Meeting Report), *Proc. BSBI* **5**: 78-81 [Key contribution to Berwickshire coverage for the *Atlas of the Flora of the British Isles* 1962]

Perring, F H, and Walters, S M, eds., 1976, *Atlas of the Flora of the British Isles*, 2nd edition, BP Publishing for the Botanical Society of the British Isles, Wakefield

Preston, C D, Hollingsworth, J P, and Gornall, R J, 1998, *Potamogeton pectinatus* L *x P. vaginatus* Turcz (*P. x bottnicus* Hagstr.) a newly identified hybrid in the British Isles, *Watsonia,* **22**: 69-82

Preston, C D, Pearman, D A & Dines, T D, eds., 2002, *New Atlas of the British and Irish Flora*, Oxford University Press, Oxford

Pringle, J, 1971, *British Regional Geology: the south of Scotland*, 3rd edition, HMSO, Edinburgh

Ragg, J M, 1960, *The soils round Kelso and Lauder,* The soil survey of Scotland, The Macaulay Institute for Soil Research, HMSO, Edinburgh

Ragg, J M, and Futty, D W, 1967, *The soils of the country round Haddington and Eyemouth*, The soil survey of Scotland, The Macaulay Institute for Soil Research, HMSO, Edinburgh

Ronse, A and Braithwaite, M E, 2012, Seed ‘for growing under trees’: the source of wood lawn neophytes in the parkland of Scottish mansion houses, *New Journal of Botany,* **2**: 149-154

Stace, C A, 1997, *New Flora of the British Isles*, 2nd edition, Cambridge University Press, Cambridge

Stace, C A, 2010, *New Flora of the British Isles*, 3rd edition, Cambridge University Press, Cambridge

Swinton, E K, 1960, Presidential address: In search of wild flowers, *HBNC* **35**: 95-99 [Illustrates the mindset of the Wild Flower Society]

Thompson, J V, 1807, *A Catalogue of Plants growing in the vicinity of Berwick-upon-Tweed*, J White, London

Thorburn, G, 2010, ‘John Forbes .... Your obedient servant’, *Hawick Archaeological Society Transactions*, 2010: 34-73, Hawick

Walters, M, 1993, *Wild & Garden Plants*, The New Naturalist Library, HarperCollinsPublishers, London.

Willmot, A, 1981, An ecological survey of the ferns of Berwickshire, *Fern Gazette,* **12**: 133-154

Winch, N J, Thornhill, J, and Waugh, R, 1805, 1807, *The botanists guide through the counties of Northumberland and Durham*, S Hodgson, Newcastle-upon-Tyne, J Marshall, Gateshead-on-Tyne [Provided much of the inspiration for G Johnston’s Flora]

10. Supplements to the check-list of the flora

Charophytes (Stoneworts)

Explanatory note

None of the charophytes are selected for inclusion in the 'Species accounts' section, so brief notes are presented below. The records are all after 1986, unless otherwise stated.

Overview

Berwickshire has a poor charophyte flora, in stark contrast to the richness of Roxburghshire and Selkirkshire with their much wider range of suitable water bodies. Coldingham Loch 86 is the only site of significance.

Chara globularis/virgata Fragile/Delicate Stonewort

Aquatic, rare or scarce

C. globularis is a lowland species of pools and pits. *C. virgata* is more typical of acid water in moorland habitats. *C. virgata* is more widely distributed in Britain than *C. globularis.* I have confused these two species, following the BSBI handbook by Moore who treated them as varieties of *C. globularis*, and have not determined them separately. My records are therefore as *C. globularis*, but are of the aggregate. Both species are slightly under-recorded in Berwickshire, but they are not at all frequent.

Sites
As *C. globularis*
Mellerstain Lake, north end 63, Marchmont, pond at 74, Newton Quarry, pit in, 84, 1982, the quarry has since been re-opened and the future of the pit is uncertain, but it was still there in 2003, though this plant was not searched for, Manderston, pond north of 85, Edington Mill, mill lade, 85, Lamberton Moor 95, small pool in mire
As *C. virgata*
Cammerlaws, pond at, 65, Coldingham Loch 86, Dronshiel Bridge, spring pools near, 75, det. expert, Mire Loch 96
Records with *Chara* referee (N F Stewart) as *C. virgata*
Hectad 64, hectad 85
Former Colonies
C. globularis, Gordon Moss 64, det. expert, and see *C. vulgaris*

Chara vulgaris Common Stonewort

Aquatic, rare or scarce

C. vulgaris grows in still or slow-moving aquatic habitats, frequent in Britain. It is apparently now rare in Berwickshire, but was formerly more frequent.

Sites
Newton Quarry, pit in, 85, 1982, the quarry has since been re-opened and the future of the pit is uncertain, but it was still there in 2003, though this plant was not searched for, Hutton Castle, ox bow of river, at foot of Cabby Burn, 85, 1984.

Former Colonies

Common in shallow ditches, pools in turfy bogs and in slow muddy rivulets, Johnston 1853. This account is likely to include *C. globularis/virgata.*

Nitella flexilis/opaca Smooth/Dark Stonewort

Aquatic, rare or scarce

These species favour still or slow-moving aquatic habitats. The dioecious *N. opaca* is more frequent in Britain than the monoecious *N. flexilis*. I have been confused these two species, following the BSBI handbook by Moore who treated them as one. My records are therefore of the aggregate. The same probably applies to most of the other records. Both are probably slightly under-recorded in Berwickshire, but they are not at all frequent.

Sites

Armet Water at Clints Hill, oxbow, 45, Legerwood, pond near, 54, Mincie Moss, ditch, 63, Wrunklaw, below, 65, Bowshiel Farm, pond at, 76, Bowshiel Dean, pond in, 76

Former sites

Record with *Chara* referee (N F Stewart) hectad 64, *N. flexilis*, Watch Water Reservoir 65, det. expert, *N. flexilis,* Longformacus, Dye Water below, 65, det. expert, *N. flexilis/opaca*, Eye Water about a mile below Blackburn (Quixwood Moor) 76, Coldingham Loch 86, Tweed at Fishwick Mains 94

Tolypella glomerata Clustered Stonewort

Aquatic, rare or scarce, British scarce

Found in water bodies with a high pH or with brackish water, southern and somewhat coastal in Britain.

Site

It is apparently restricted in Berwickshire to Coldingham Loch 86, known for its rich aquatic flora.

Critical genera

Explanatory note

No species in the critical genera *Hieracium, Rubus fructicosus* aggregate or *Taraxacum* are selected for inclusion in the 'Species Accounts' section, so brief notes on these genera are presented below.

Hieracium agg. Hawkweed

Rock outcrops and rocky banks, sometimes in woodland.

Although the aggregate is widespread and frequent in Britain the apomictic segregate species other than *H. vulgatum* are more local.

D J McCosh has carried out systematic, but not exhaustive, fieldwork in Berwickshire between 1987 and 2011 and has assessed previous records with the help of P D Sell, whose nomenclature is followed. The records for species other than *H. vulgatum* are from a limited number of sites, often of other botanical interest. These are listed by site. A small selection of other sites with *Hieracia* records is added. Records before 1970 are treated as former records in square brackets [ ]. Those whose determination is unconfirmed are given in round brackets ( ) and are shown as 'data deficient' the check list; these are *H. auratiflorum, H. dasythrix and H. riddelsdellii.* Sites from which no hawkweeds have been recorded since 1970 are shown as former sites. *H. grandidens, H. vagum* and *H. virgultorum* are neophytes.

Sites by hectad
45, Raughty Burn, *orimeles*
53, Gaitheugh, *ampliatum, subcrocatum*
55, Whalplaw Burn, *rubicundiforme*
64, Hareheugh Craigs, *argenteum, leyi;* Greenlaw Dean, [*oistophyllum*], *rubicundiforme*
65, Longformacus, Dye Water above, *cravoniense*
73, Birgham Wood, *virgultorum*
74, Hume Craigs, *deganwyense*
75, Preston Bridge, *sabaudum;* Hoardweel, Humbles Knowe, *subcrocatum;* Hoardweel, Devil's Dungeon, *sabaudum*
76, Bankend Wood, *reticulatiforme;* Elba, *sabaudum*
77, Dunglass Dean, *subcrocatum, virgultorum*
84, The Hirsel, *grandidens*
85, Allanton Bridge, *cravoniense*; Hutton Castle, scaurs by Whiteadder, *dicella,* (*auratiflorum*)
86, Westerside Dean, *(riddelsdellii);* Lumsdaine Dean, *dicella*
87, Dowlaw Dean, *argenteum, deganwyense*, *dicella*, *schmidtii*
95, Hutton, scaurs by Whiteadder, *britanniciforme,, dicella;* Edrington Mains, *dicella*
96, St Abbs Head, *dicella,* [*schmidtii*]; Killiedraught Bay, *dicella,* Burnmouth, sea braes, *boswellii, britanniciforme, caesiomurorum,* (*dasythrix*), *orimeles,* [(*riddelsdellii*)]; Lamberton, below, *deganwyense*

Other sites with unidentified species other than *H. vulgatum*
77, Cove Harbour; 95, Foulden West Mains; Lamberton Undercliff

Former sites
53, Redpath Dean, [*prenanthoides*]; 73, Newton Don, [*grandidens*]; 75, Langton Woodend, [*umbellatum*]; 76, Penmanshiel Wood, [*umbellatum*]; 83, The Lees, [*vagum*]; 84, Hatchednize, [*umbellatum*]; 86, Lumsdaine Farm, below, [*subcrocatum*]; 96, Ale Water, [(*boswellii*)], [*prenanthoides*]

Rubus fructicosus agg. Bramble

Woodland and rough grassland

Although the aggregate is very widespread and abundant in Britain many of the apomictic segregate species are more local. Fieldwork by A Newton in 1978 and 1984 and G H Ballantyne 1985-2000 has been sufficient to establish the segregate species frequent in Berwickshire. All the species found are at least relatively widespread except *R. newtonii*, a recently described species with a restricted distribution. It is at present known only from Northumberland, Roxburghshire, Berwickshire and East Lothian. Within this area it is relatively frequent and is known from 23 hectads. The Berwickshire records are thus of local interest but are unlocalised as: 73, roadside 77, roadside, 84, roadside, 96, Aytonwood House, near

Taraxacum officinale agg. Dandelion

Grassland and ruderal habitats

Although the aggregate is very widespread and abundant in Britain many of the apomictic segregates are more local. Field meetings led by A J Richards in 1979 and C C Haworth in 1986 have been sufficient to establish the segregate species frequent in Berwickshire. Their nomenclature has been followed. No rare species have been recorded but two of the six species recorded in section *Erythrosperma*, the lesser dandelions of dry places, are mainly southern species of calcareous grassland. Their presence is of interest. They are likely to be locally scarce and their records are as: *T. argutum,* Bluestoneford 85; *T. rubicundum,* St Abbs Head 96.

Summary statistics for the check-list of the flora

Species and subspecies 1987-2013

Monads	**Native**	**Arc**	**Neo**	**Cas**	**Total**
0	47	11	23	70	151
1	29	3	53	84	169
2-3	36	4	54	42	136
4-7	42	5	50	33	130
8-15	56	13	28	15	112
16-31	77	13	34	13	137
32-63	76	19	21	6	122
64-127	104	22	19	1	146
128-255	136	8	8	0	152
256-429	56	2	1	0	59
	659	**100**	**291**	**264**	**1,314**

Hybrids 1987-2013

Monads	**Native**	**Arc**	**Neo**	**Cas**	**Total**
0	4	0	0	0	4
1	16	0	10	18	44
2-3	11	0	5	4	20
4-7	16	0	7	3	26
8-15	11	0	3	1	15
16-31	9	1	4	2	16
32-63	0	0	1	1	2
64-127	1	0	3	1	5
128-255	0	0	0	0	0
256-429	0	0	0	0	0
Total	**68**	**1**	**33**	**30**	**132**

Microspecies 1970-2013

Monads	**Native**	**Arc**	**Neo**	**Cas**	**Total**
0	6	0	2	0	83
1	24	0	13	0	18
2-3	35	0	10	0	12
4-7	17	0	0	0	3
8-15	9	0	0	0	2
16-31	6	0	0	0	4
32-63	2	0	1	0	3
64-127	1	0	0	0	1
128-255	1	0	0	0	1
256-429	0	0	0	0	0
Total	**101**	**0**	**26**	**0**	**127**

All taxa except varieties etc 1987-2013

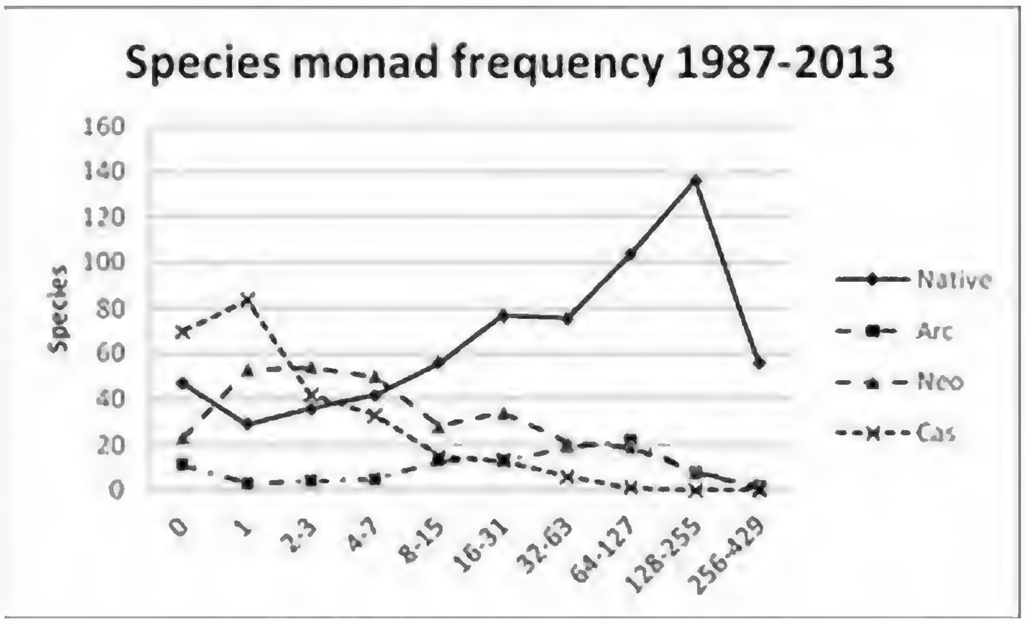
Monads	**Native**	**Arc**	**Neo**	**Cas**	**Total**
0	57	11	25	70	163
1	69	3	76	102	250
2-3	82	4	69	46	201
4-7	75	5	57	36	173
8-15	76	13	31	16	136
16-31	92	14	38	15	159
32-63	78	19	23	7	127
64-127	106	22	22	2	152
128-255	137	8	8	0	153
256-429	56	2	1	0	59
	828	**101**	**350**	**294**	**1,573**

Microspecies genera: *Alchemilla, Euphrasia, Hieracium, Rubus fructicosus aggregate, Taraxacum*
Excluded: aggregate, data deficient, possible error, variety
Included: EArc/Cas as Cas, ENative/Neo as Neo, Native/Arc as Arc

Notes

- The sampling nature of the surveys limits the number of monads recorded, especially for the more widespread species and for most hybrids and microspecies
- In view of the low level of 1987-2013 recording for *Hieracium*, *Rubus fructicosus aggregate* and *Taraxacum*, 1970-2013 data has been substituted for 1987-2013 data.

Chart of species frequency



The chart of species frequency (which excludes hybrids and microspecies) is biased in various ways by the recording sample. In particular the upper frequency of the widespread species is limited by the sample size while planted trees and crops have been under-sampled.

At monad scale the widespread species are dominated by native species. The frequency of the archaeophytes, many of which are arable weeds, peaks with the moderately widespread species. In comparison the neophytes have a disproportionate number of scarce species. The casuals also include many scarce species, some of them planted.

At finer scales (100m and 10m), field crop species, sown grasses and commercially planted trees would achieve prominence over the native species.

Table of extinct species

Explanatory note

This table summarises the native and archaeophyte species shown as extinct in the check-list. Species with an asterisk * against the 'date of last record' have been recorded more recently as introductions. Species shown as 'error', 'former casual' or 'data deficient' in the check-list are excluded. The dividing line between 'extinct' and 'former casual' is a fine one, especially for archaeophytes and those species for which there is only a single record. Extinct *Hieracia* are excluded.

Date last recrd	***Species***
*1855	*Agrostemma githago*
1853	*Allium oleraceum*
1886	*Anacamptis pyramidalis*
1896	*Anagallis arvensis subsp. foemina*
1886	*Arctostaphylos uva-ursi*
1922	*Baldellia ranunculoides*
1915	*Carex aquatilis*
1989	*Carex limosa*
1910	*Carex magellanica*
1853	*Cladium mariscus*
1947	*Coeloglossum viride*
1892	*Diphasiastrum complanatum*
1828	*Drosera anglica*
1853	*Eleocharis multicaulis*
1875	*Eleogiton fluitans*
1982	*Epipactis helleborine*
1836	*Epipactis palustris*
1836	*Equisetum hyemale*
1957	*Euphorbia exigua*
1907	*Euphrasia rostkoviana (E. officinalis)*
1839	*Festuca vivipara*
1866	*Galeopsis angustifolia*
1961	*Genista tinctoria subsp. tinctoria*
1968	*Gentianella campestris*
1989	*Gnaphalium sylvaticum*
1993	*Goodyera repens*
1960	*Gymnadenia conopsea subsp. densiflora (G. densiflora)*
1885	*Hordelymus europaeus*
1902	*Lepidium campestre*
1867	*Lotus glaber (L. tenuis)*
*1979	*Lythrum salicaria*
1983	*Melica nutans*
1913	*Mertensia maritima*
1985	*Neottia nidus-avis*
1838	*Oenanthe aquatica*
1942	*Orchis morio (Anacamptis morio)*
1902	*Osmunda regalis*
1965	*Papaver argemone*
1873	*Platanthera chlorantha*
1916	*Potamogeton coloratus*
1906	*Potamogeton gramineus*
1973	*Potamogeton x cooperi = P. crispus x perfoliatus*
1959	*Potentilla argentea*
1866	*Potentilla tabernaemontani*
1867	*Pseudorchis albida*
1853	*Pulicaria dysenterica*
1913	*Pyrola media*
1878	*Radiola linoides*
1966	*Ranunculus arvensis*
1989	*Ranunculus circinatus*
1902	*Rumex pseudoalpinus (R. alpinus)*
1956	*Sambucus ebulus*
1924	*Samolus valerandi*
*1978	*Sanguisorba officinalis*
1900	*Saxifraga hirculus*
1960	*Scandix pecten-veneris*
1969	*Senecio erucifolius*
1971	*Silene noctiflora*
1982	*Sparganium natans*
1877	*Teesdalia nudicaulis*
1836	*Thalictrum flavum*
1960	*Trifolium scabrum*
1853	*Utricularia intermedia sens. lat.*
1974	*Utricularia minor*
1902	*Utricularia vulgaris sens. lat.*
1967	*Valerianella dentata*

English-Latin Index

This is an index of the English ‘generic’ names in the alphabetical ‘Check-list’ and enables a species to be searched for in the check-list. Note the treatment of hyphenated names, e.g. Marsh-orchid is listed under ‘Marsh’ not ‘Orchid’. In case of difficulty, the species should be looked up in a standard Flora to determine its Latin name.

English	***Latin***
Abraham-Isaac-Jacob	*Trachystemon*
Acnidia	*Acnidia*
Aconite	*Eranthis*
Agrimony	*Agrimonia*
Agrimony	*Aremonia*
Alder	*Alnus*
Alexanders	*Smyrnium*
Alison	*Lobularia*
Alkanet	*Anchusa*
Alkanet	*Pentaglottis*
Allseed	*Radiola*
Amaranth	*Amaranthus*
American-spikenard	*Aralia*
Anemone	*Anemone*
Angelica	*Angelica*
Apple	*Malus*
Arabis	*Arabis*
Archangel	*Lamiastrum*
Arrowgrass	*Triglochin*
Arrowhead	*Sagittaria*
Artichoke	*Helianthus*
Asarabacca	*Asarum*
Ash	*Fraxinus*
Aspen	*Populus*
Asphodel	*Narthecium*
Asphodel	*Tofieldia*
Aster	*Aster*
Astrantia	*Astrantia*
Aubretia	*Aubrieta*
Aunt-Eliza	*Crocosmia*
Avens	*Geum*
Azalea	*Rhododendron*
Balm-of-Gilead	*Populus*
Balsam	*Impatiens*
Balsam-poplar	*Populus*
Bamboo	*Sasa*
Baneberry	*Actaea*
Barberry	*Berberis*
Barley	*Hordelymus*
Barley	*Hordeum*
Bartsia	*Odontites*
Basil	*Clinopodium*
Bean	*Vicia*
Bearberry	*Arctostaphylos*
Beard-grass	*Polypogon*
Bedstraw	*Galium*
Beech	*Fagus*
Beet	*Beta*
Bellflower	*Campanula*
Bent	*Agrostis*
Betony	*Stachys*
Bilberry	*Vaccinium*
Bindweed	*Calystegia*
Bindweed	*Convolvulus*
Birch	*Betula*
Bird-in-a-bush	*Corydalis*
Bird's-foot	*Ornithopus*
Bird's-foot-trefoil	*Lotus*
Bistort	*Persicaria*
Bitter-cress	*Cardamine*
Bittersweet	*Solanum*
Bitter-vetch	*Lathyrus*
Bitter-vetch	*Vicia*
Black-bindweed	*Fallopia*
Black-grass	*Alopecurus*
Black-poplar	*Populus*
Blackthorn	*Prunus*
Bladder-fern	*Cystopteris*
Bladderwort	*Utricularia*
Bleeding-heart	*Dicentra*
Blinks	*Montia*
Blood-drop-emlets	*Mimulus*
Bluebell	*Hyacinthoides*
Blue-sow-thistle	*Cicerbita*
Bogbean	*Menyanthes*
Bog-myrtle	*Myrica*
Bog-rush	*Schoenus*
Bog-sedge	*Carex*
Borage	*Borago*
Box	*Buxus*
Bracken	*Pteridium*
Bramble	*Rubus*
Bridewort	*Spiraea*
Bristle-grass	*Setaria*
Brome	*Anisantha*
Brome	*Bromopsis*
Brome	*Bromus*
Brooklime	*Veronica*
Brookweed	*Samolus*
Broom	*Cytisus*
Broomrape	*Orobanche*
Brussels-sprout	*Brassica*
Bryony	*Tamus*
Buckler-fern	*Dryopteris*
Buckwheat	*Fagopyrum*
Bugle	*Ajuga*
Bugloss	*Anchusa*
Bullwort	*Ammi*
Bulrush	*Typha*
Burdock	*Arctium*
Bur-marigold	*Bidens*
Burnet	*Sanguisorba*
Burnet-saxifrage	*Pimpinella*
Bur-reed	*Sparganium*
Butcher's-broom	*Ruscus*
Butterbur	*Petasites*
Buttercup	*Ranunculus*
Butterfly-bush	*Buddleja*
Butterfly-orchid	*Platanthera*
Butterwort	*Pinguicula*
Cabbage	*Brassica*
Campion	*Lychnis*
Campion	*Silene*
Canary-grass	*Phalaris*
Candytuft	*Iberis*
Carrot	*Daucus*
Catchfly	*Silene*
Catmint	*Nepeta*
Cat's-ear	*Hypochaeris*
Cat's-tail	*Phleum*
Cedar	*Cedrus*
Celandine	*Chelidonium*
Celandine	*Ranunculus*
Centaury	*Centaurium*
Chamomile	*Anthemis*
Chamomile	*Chamaemelum*
Charlock	*Sinapis*
Cherry	*Prunus*
Chervil	*Chaerophyllum*
Chestnut	*Castanea*
Chickweed	*Myosoton*
Chickweed	*Stellaria*

Chickweed-wintergreen	*Trientalis*
Chicory	*Cichorium*
Chilean-iris	*Libertia*
Chives	*Allium*
Christmas-rose	*Helleborus*
Cicely	*Myrrhis*
Cinquefoil	*Potentilla*
Clary	*Salvia*
Cleavers	*Galium*
Cloudberry	*Rubus*
Clover	*Trifolium*
Clubmoss	*Diphasiastrum*
Clubmoss	*Huperzia*
Clubmoss	*Lycopodium*
Clubmoss	*Selaginella*
Club-rush	*Eleogiton*
Club-rush	*Isolepis*
Club-rush	*Schoenoplectus*
Club-rush	*Scirpus*
Cock's-foot	*Dactylis*
Cockspur	*Echinochloa*
Colt's-foot	*Tussilago*
Columbine	*Aquilegia*
Comfrey	*Symphytum*
Coneflower	*Rudbeckia*
Coriander	*Coriandrum*
Corncockle	*Agrostemma*
Cornflower	*Centaurea*
Cornsalad	*Valerianella*
Corydalis	*Ceratocapnos*
Corydalis	*Pseudofumaria*
Cotoneaster	*Cotoneaster*
Cottongrass	*Eriophorum*
Couch	*Elymus*
Couch	*Elytrigia*
Cowbane	*Cicuta*
Cowberry	*Vaccinium*
Cowslip	*Primula*
Cow-wheat	*Melampyrum*
Crab	*Malus*
Crambe	*Crambe*
Cranberry	*Vaccinium*
Crane's-bill	*Geranium*
Creeping-Jenny	*Lysimachia*
Cress	*Arabidopsis*
Cress	*Lepidium*
Cress	*Teesdalia*
Crocus	*Crocus*
Crosswort	*Cruciata*
Crosswort	*Phuopsis*
Crowberry	*Empetrum*
Crowfoot	*Ranunculus*
Cuckooflower	*Cardamine*
Cudweed	*Filago*
Cudweed	*Gnaphalium*
Currant	*Ribes*
Cut-grass	*Leersia*
Cypress	*Chamaecyparis*
Cypress	*Cupressus*
Cypress	*Taxodium*
Cypress	*X Cupressocypa*
Daffodil	*Narcissus*
Daisy	*Bellis*
Daisy	*Erigeron*
Daisy	*Leucanthemum*
Dame's-violet	*Hesperis*
Dandelion	*Taraxacum*
Dead-nettle	*Lamium*
Deergrass	*Trichophorum*
Deodar	*Cedrus*
Dewberry	*Rubus*
Dock	*Rumex*
Dodder	*Cuscuta*
Dog-rose	*Rosa*
Dog's-tail	*Cynosurus*
Dog's-tooth-violet	*Erythronium*
Dog-violet	*Viola*
Dogwood	*Cornus*
Downy-rose	*Rosa*
Dropwort	*Filipendula*
Duckweed	*Lemna*
Elder	*Sambucus*
Elecampane	*Inula*
Elm	*Ulmus*
Enchanter's-nightshade	*Circaea*
Escallonia	*Escallonia*
Evening-primrose	*Oenothera*
Everlasting	*Antennaria*
Everlasting-pea	*Lathyrus*
Eyebright	*Euphrasia*
False-acacia	*Robinia*
False-brome	*Brachypodium*
False-buck's-beard	*Astilbe*
Fat-hen	*Chenopodium*
Fennel	*Foeniculum*
Fen-sedge	*Cladium*
Fern, Adder’s-tongue	*Ophioglossum*
Fern, Beech	*Phegopteris*
Fern, Hard	*Blechnum*
Fern, Hart’s-tongue	*Phyllitis*
Fern, Lady	*Athyrium*
Fern, Lemon-scented	*Oreopteris*
Fern, Oak	*Gymnocarpium*
Fern, Ostrich	*Matteuccia*
Fern, Parsley	*Cryptogramma*
Fern, Royal	*Osmunda*
Fern, Rustyback	*Ceterach*
Fern-grass	*Catapodium*
Fescue	*Festuca*
Fescue	*Vulpia*
Fescue	*X Festulolium*
Feverfew	*Tanacetum*
Fiddleneck	*Amsinckia*
Field-rose	*Rosa*
Field-speedwell	*Veronica*
Figwort	*Scrophularia*
Fir	*Abies*
Fir	*Pseudotsuga*
Flat-sedge	*Blysmus*
Flax	*Linum*
Fleabane	*Conyza*
Fleabane	*Pulicaria*
Flixweed	*Descurainia*
Flowering-rush	*Butomus*
Fool's-water-cress	*Apium*
Forget-me-not	*Myosotis*
Forsythia	*Forsythia*
Fountain-bamboo	*Yushania*
Fox-and-cubs	*Pilosella*
Foxglove	*Digitalis*
Foxglove	*Erinus*
Fox-sedge	*Carex*
Foxtail	*Alopecurus*
Fringe-cups	*Tellima*
Fritillary	*Fritillaria*
Fuchsia	*Fuchsia*
Fumitory	*Fumaria*
Gallant-soldier	*Galinsoga*
Garlic	*Allium*
Gentian	*Gentianella*
Giant-rhubarb	*Gunnera*
Globeflower	*Trollius*
Globe-thistle	*Echinops*
Glory-of-the-snow	*Chionodoxa*
Goat's-beard	*Tragopogon*
Goat's-rue	*Galega*
Goldenrod	*Solidago*

Golden-saxifrage	*Chrysosplenium*
Gold-of-pleasure	*Camelina*
Good-King-Henry	*Chenopodium*
Gooseberry	*Ribes*
Goosefoot	*Chenopodium*
Gorse	*Ulex*
Grape-hyacinth	*Muscari*
Grass-of-Parnassus	*Parnassia*
Greenweed	*Genista*
Gromwell	*Lithospermum*
Ground-elder	*Aegopodium*
Ground-ivy	*Glechoma*
Groundsel	*Senecio*
Guelder-rose	*Viburnum*
Gypsywort	*Lycopus*
Hair-grass	*Aira*
Hair-grass	*Deschampsia*
Hair-grass	*Koeleria*
Hard-grass	*Parapholis*
Harebell	*Campanula*
Hawkbit	*Leontodon*
Hawk's-beard	*Crepis*
Hawkweed	*Hieracium*
Hawthorn	*Crataegus*
Hazel	*Corylus*
Heath	*Erica*
Heather	*Calluna*
Heather	*Erica*
Heath-grass	*Danthonia*
Hebe	*Hebe*
Hedge-parsley	*Torilis*
Heliotrope	*Petasites*
Hellebore	*Helleborus*
Helleborine	*Epipactis*
Hemlock	*Conium*
Hemlock-spruce	*Tsuga*
Hemp-agrimony	*Eupatorium*
Hemp-nettle	*Galeopsis*
Henbane	*Hyoscyamus*
Herb-Robert	*Geranium*
Hogweed	*Heracleum*
Holly	*Ilex*
Honesty	*Lunaria*
Honeysuckle	*Leycesteria*
Honeysuckle	*Lonicera*
Hop	*Humulus*
Hop-hornbeam	*Ostraya*
Horehound	*Ballota*
Horehound	*Marrubium*
Hornbeam	*Carpinus*
Horned-poppy	*Glaucium*
Hornwort	*Ceratophyllum*
Horse-chestnut	*Aesculus*
Horse-radish	*Armoracia*
Horsetail	*Equisetum*
Hound's-tongue	*Cynoglossum*
House-leek	*Sempervivum*
Indian-rhubarb	*Darmera*
Iris	*Iris*
Ivy	*Hedera*
Jacob's-ladder	*Polemonium*
Japanese-maple	*Acer*
Judas-tree	*Cercis*
Juniper	*Juniperus*
Kale	*Brassica*
Kerria	*Kerria*
Knapweed	*Centaurea*
Knawel	*Scleranthus*
Knotgrass	*Polygonum*
Knotweed	*Fallopia*
Knotweed	*Persicaria*
Laburnum	*Laburnum*
Lady's-mantle	*Alchemilla*
Lady's-tresses	*Goodyera*
Larch	*Larix*
Laurel	*Prunus*
Leek	*Allium*
Lenten-rose	*Helleborus*
Leopard's-bane	*Doronicum*
Leptinella	*Cotula*
Lettuce	*Lactuca*
Lettuce	*Mycelis*
Lilac	*Syringa*
Lily	*Lilium*
Lily-of-the-valley	*Convallaria*
Lime	*Tilia*
Liquorice	*Astragalus*
Lobelia	*Lobelia*
Londonpride	*Saxifraga*
Loosestrife	*Lysimachia*
Lords-and-Ladies	*Arum*
Lousewort	*Pedicularis*
Lovage	*Levisticum*
Lovage	*Ligusticum*
Lucerne	*Medicago*
Lungwort	*Pulmonaria*
Lupin	*Lupinus*
Lyme-grass	*Leymus*
Madder	*Sherardia*
Maize	*Zea*
Male-fern	*Dryopteris*
Mallow	*Malva*
Mallow	*Sidalcea*
Maltese-Cross	*Lychnis*
Maple	*Acer*
Mare's-tail	*Hippuris*
Marigold	*Calendula*
Marigold	*Caltha*
Marigold	*Chrysanthemum*
Marjoram	*Origanum*
Marram	*Ammophila*
Marsh-bedstraw	*Galium*
Marsh-orchid	*Dactylorhiza*
Marshwort	*Apium*
Masterwort	*Peucedanum*
Mat-grass	*Nardus*
Mayweed	*Matricaria*
Mayweed	*Tripleurosperm*
Meadow-grass	*Poa*
Meadow-rue	*Thalictrum*
Meadowsweet	*Filipendula*
Medick	*Medicago*
Melick	*Melica*
Melilot	*Melilotus*
Mercury	*Mercurialis*
Michaelmas-daisy	*Aster*
Mignonette	*Reseda*
Milfoil	*Achillea*
Milk-vetch	*Astragalus*
Milkwort	*Polygala*
Millet	*Milium*
Millet	*Panicum*
Mind-your-own-business	*Soleirolia*
Mint	*Mentha*
Mistletoe	*Viscum*
Mock-orange	*Philadelphus*
Monkeyflower	*Mimulus*
Monkey-puzzle	*Araucaria*
Monk's-hood	*Aconitum*
Monk's-rhubarb	*Rumex*
Montbretia	*Crocosmia*
Moonwort	*Botrychium*
Moor-grass	*Molinia*
Moschatel	*Adoxa*
Mountain-pine	*Pinus*
Mouse-ear	*Cerastium*
Mouse-ear-hawkweed	*Pilosella*
Mugwort	*Artemisia*
Mullein	*Verbascum*
Musk	*Mimulus*
Mustard	*Alliaria*

Mustard	*Brassica*
Mustard	*Conringia*
Mustard	*Erysimum*
Mustard	*Sinapis*
Mustard	*Sisymbrium*
Nasturtium	*Tropaeolum*
Nettle	*Urtica*
Nightshade	*Solanum*
Nipplewort	*Lapsana*
Oak	*Quercus*
Oat	*Avena*
Oat-grass	*Arrhenatherum*
Oat-grass	*Helictotrichon*
Oat-grass	*Trisetum*
Onion	*Allium*
Orache	*Atriplex*
Orchid, Pyramidal	*Anacamptis*
Orchid, Frog	*Coeloglossum*
Orchid, Coralroot	*Corallorhiza*
Orchid, Fragrant	*Gymnadenia*
Orchid, Bird's-nest	*Neottia*
Orchid, Early-purple	*Orchis*
Orchid, Green-winged	*Orchis*
Orchid, Small-white	*Pseudorchis*
Orchid, a hybrid	*X Dactylodenia*
Oregon-grape	*Mahonia*
Orpine	*Sedum*
Osier	*Salix*
Oxeye	*Leucanthemella*
Oxeye	*Telekia*
Oxlip	*Primula*
Oxtongue	*Picris*
Oysterplant	*Mertensia*
Pampas-grass	*Cortaderia*
Pansy	*Viola*
Parsley	*Aethusa*
Parsley	*Anthriscus*
Parsley	*Petroselinum*
Parsley	*Sison*
Parsley-piert	*Aphanes*
Parsnip	*Pastinaca*
Pea	*Pisum*
Pear	*Pyrus*
Pearlwort	*Sagina*
Pellitory-of-the-Wall	*Parietaria*
Penny-cress	*Thlaspi*
Pennyroyal	*Mentha*
Pennywort	*Hydrocotyle*
Peony	*Paeonia*
Peppermint	*Mentha*
Pepper-saxifrage	*Silaum*
Pepperwort	*Lepidium*
Periwinkle	*Vinca*
Persicaria	*Persicaria*
Phacelia	*Phacelia*
Pick-a-back-plant	*Tolmiea*
Pigmyweed	*Crassula*
Pignut	*Conopodium*
Pimpernel	*Anagallis*
Pimpernel	*Lysimachia*
Pine	*Pinus*
Pineappleweed	*Matricaria*
Pink	*Dianthus*
Pink-sorrel	*Oxalis*
Pinkweed	*Persicaria*
Pirri-pirri-bur	*Acaena*
Plane	*Platanus*
Plantain	*Plantago*
Plum	*Prunus*
Pokeweed	*Phytolacca*
Polypody	*Polypodium*
Pond-sedge	*Carex*
Pondweed	*Potamogeton*
Pondweed	*Zannichellia*
Poplar	*Populus*
Poppy	*Eschscholzia*
Poppy	*Meconopsis*
Poppy	*Papaver*
Potato	*Solanum*
Primrose	*Primula*
Privet	*Ligustrum*
Purple-loosestrife	*Lythrum*
Purslane	*Claytonia*
Quaking-grass	*Briza*
Quinoa	*Chenopodium*
Radish	*Raphanus*
Ragged-Robin	*Lychnis*
Ragwort	*Senecio*
Ramping-fumitory	*Fumaria*
Ramsons	*Allium*
Rape	*Brassica*
Raspberry	*Rubus*
Rauli	*Nothofagus*
Red-cedar	*Cryptomeria*
Red-cedar	*Thuja*
Red-hot-poker	*Kniphofia*
Redshank	*Persicaria*
Redwood	*Metasequoia*
Redwood	*Sequoia*
Reed	*Phragmites*
Restharrow	*Ononis*
Rhododendron	*Rhododendron*
Rhubarb	*Rheum*
Roble	*Nothofagus*
Rock-cress	*Arabis*
Rocket	*Cakile*
Rocket	*Carrichtera*
Rocket	*Eruca*
Rocket	*Sisymbrium*
Rockrose	*Helianthemum*
Rose	*Rosa*
Rose-of-Sharon	*Hypericum*
Roseroot	*Sedum*
Rowan	*Sorbus*
Rush	*Juncus*
Russian-vine	*Fallopia*
Rye	*Secale*
Rye-grass	*Lolium*
Saffron	*Colchicum*
Sage	*Teucrium*
Sainfoin	*Onobrychis*
Salmonberry	*Rubus*
Saltmarsh-grass	*Puccinellia*
Saltwort	*Salsola*
Sandwort	*Arenaria*
Sandwort	*Honckenya*
Sandwort	*Minuartia*
Sandwort	*Moehringia*
Sanicle	*Sanicula*
Saxifrage	*Saxifraga*
Scabious	*Cephalaria*
Scabious	*Knautia*
Scabious	*Scabiosa*
Scabious	*Succisa*
Scurvygrass	*Cochlearia*
Sea-blite	*Suaeda*
Sea-buckthorn	*Hippophae*
Sea-kale	*Crambe*
Sea-milkwort	*Glaux*
Sea-spurrey	*Spergularia*
Sedge	*Carex*
Selfheal	*Prunella*
Service-tree	*Sorbus*
Shallon	*Gaultheria*
Sheep's-fescue	*Festuca*
Shepherd's-needle	*Scandix*
Shepherd's-purse	*Capsella*
Shield-fern	*Polystichum*

Shoreweed	*Littorella*
Silver-fir	*Abies*
Silverweed	*Potentilla*
Skullcap	*Scutellaria*
Skunk-cabbage	*Lysichiton*
Snapdragon	*Antirrhinum*
Snapdragon	*Asarina*
Sneezewort	*Achillea*
Snowberry	*Symphoricarpos*
Snowdrop	*Galanthus*
Snowflake	*Leucojum*
Snow-in-summer	*Cerastium*
Soapwort	*Saponaria*
Soft-brome	*Bromus*
Soft-grass	*Holcus*
Solomon's-seal	*Polygonatum*
Sorrel	*Rumex*
Sow-thistle	*Sonchus*
Spatter-dock	*Nuphar*
Spearwort	*Ranunculus*
Speedwell	*Veronica*
Spike-rush	*Eleocharis*
Spindle	*Euonymus*
Spleenwort	*Asplenium*
Spotted-orchid	*Dactylorhiza*
Spring-beauty	*Claytonia*
Spruce	*Picea*
Spurge	*Euphorbia*
Spurge-laurel	*Daphne*
Spurrey	*Spergula*
Spurrey	*Spergularia*
Squill	*Scilla*
St John's-wort	*Hypericum*
Star-of-Bethlehem	*Ornithogalum*
Steeple-bush	*Spiraea*
Stitchwort	*Stellaria*
Stonecrop	*Sedum*
Stork's-bill	*Erodium*
Stranvaesia	*Photinia*
Strawberry	*Fragaria*
Strawberry	*Potentilla*
Sundew	*Drosera*
Sunflower	*Helianthus*
Swede	*Brassica*
Sweet-briar	*Rosa*
Sweet-flag	*Acorus*
Sweet-grass	*Glyceria*
Swine-cress	*Coronopus*
Sycamore	*Acer*
Tansy	*Tanacetum*
Tare	*Vicia*
Teasel	*Dipsacus*
Thistle	*Carduus*
Thistle	*Carlina*
Thistle	*Cirsium*
Thistle	*Onopordum*
Thistle	*Silybum*
Thorn-apple	*Datura*
Thrift	*Armeria*
Thyme	*Clinopodium*
Thyme	*Thymus*
Timothy	*Phleum*
Toadflax	*Chaenorhinum*
Toadflax	*Cymbalaria*
Toadflax	*Linaria*
Tomato	*Lycopersicon*
Toothwort	*Lathraea*
Tormentil	*Potentilla*
Traveller's-joy	*Clematis*
Tree-mallow	*Lavatera*
Trefoil	*Trifolium*
Triticale	*X Triticosecale*
Tufted-sedge	*Carex*
Tulip	*Tulipa*
Tulip-tree	*Liriodendron*
Turnip	*Brassica*
Tussock-sedge	*Carex*
Tutsan	*Hypericum*
Twayblade	*Listera*
Twinflower	*Linnaea*
Valerian	*Centranthus*
Valerian	*Valeriana*
Vernal-grass	*Anthoxanthum*
Veronica	*Hebe*
Vervain	*Verbena*
Vetch	*Anthyllis*
Vetch	*Vicia*
Vetchling	*Lathyrus*
Violet	*Viola*
Violet-willow	*Salix*
Viper's-bugloss	*Echium*
Wallflower	*Erysimum*
Wall-rocket	*Diplotaxis*
Wall-rue	*Asplenium*
Walnut	*Juglans*
Water-cress	*Rorippa*
Water-crowfoot	*Ranunculus*
Water-dropwort	*Oenanthe*
Water-lily	*Nuphar*
Water-lily	*Nymphaea*
Water-lily	*Nymphoides*
Water-milfoil	*Myriophyllum*
Water-parsnip	*Berula*
Water-parsnip	*Sium*
Water-pepper	*Persicaria*
Water-plantain	*Alisma*
Water-plantain	*Baldellia*
Water-purslane	*Lythrum*
Water-speedwell	*Veronica*
Water-starwort	*Callitriche*
Waterweed	*Elodea*
Waterweed	*Lagarosiphon*
Wayfaring-tree	*Viburnum*
Weld	*Reseda*
Wellingtonia	*Sequoiadendron*
Wheat	*Triticum*
Whin	*Genista*
Whitebeam	*Sorbus*
Whitlowgrass	*Draba*
Whitlowgrass	*Erophila*
Whorl-grass	*Catabrosa*
Willow	*Salix*
Willowherb	*Chamerion*
Willowherb	*Epilobium*
Winter-cress	*Barbarea*
Wintergreen	*Pyrola*
Wolf's-bane	*Aconitum*
Woodruff	*Galium*
Wood-rush	*Luzula*
Wood-sorrel	*Oxalis*
Wormwood	*Artemisia*
Wormwood	*Seriphidium*
Woundwort	*Stachys*
Yarrow	*Achillea*
Yellow-cress	*Rorippa*
Yellow-rattle	*Rhinanthus*
Yellow-sedge	*Carex*
Yellow-sorrel	*Oxalis*
Yew	*Taxus*
Yorkshire-fog	*Holcus*

11. Alphabetical check-list of the flora

Explanatory Notes

This check-list is presented in alphabetic order by Latin name. An index to the English names precedes this check-list.

Taxa highlighted in **bold** are those for which full species accounts are presented in the 'Species accounts' section. Taxa highlighted in **blue bold** are those for which shorter species accounts are presented in the 'Changing flora' section.

Nomenclature follows Preston, Pearman and Dines *New Atlas of the British Flora*, 2002, which in turn follows Stace *New Flora of the British Isles*, 2nd edition 1997. Synonyms with Stace *New Flora of the British Isles*, 3rd edition 2010 are given in brackets. Genera added in *Stace* 3rd edition are cross-referenced in the English Name column to those used in *Stace* 2nd edition. See the separate section on 'Critical genera' for the nomenclature of *Hieracium*, *Rubus* and *Taraxacum*.

Date

Natives and archaeophytes:

- Recorded since 1986 and not now considered to be extinct: 1987+
- Considered extinct: date of last record

Neophytes:

- Not considered extinct: date of first record, in the format 1853+
- Considered extinct: date of last record

Casuals, data deficient and possible errors:

- Recorded since 1986: 1987+
- Not recorded since 1986: date of last record.

Status

Arc – considered to be an archaeophyte in Berwickshire, having been present before 1500 but not being native to Berwickshire

Cas – considered to be casual in Berwickshire, having only been present for a short period or to have been planted and not to have naturalised (though self-sown seedlings and saplings may occur)

Data deficient – where there is doubt about the status of Berwickshire records or their taxonomy

Error ? – where there is doubt about the identity of Berwickshire records or whether they relate to Berwickshire

Native – considered to be native in Berwickshire. Native – possible archaeophyte

Neo – considered to be a neophyte in Berwickshire, having been introduced or having colonised since 1500 and to have naturalised in at least some of its localities. Neo – possible archaeophyte.

Habitat

All taxa are ascribed to the 'broad habitat' in which they are most frequent in Berwickshire, using a simplified set of ten broad habitats as: Aquatic, Arable, Coast, Grassland, Moorland, Riverside, Rock, Ruderal, Wetland, Woodland.

Frequency 1km^2 87+

This is the number of monads in which a taxon has been recorded in Berwickshire during the period 1987-2013 in the BSBI MapMate database, so there is no entry at species level if all records are at segregate level. Due to the low level of recording for *Hieracium*, *Rubus fructicosus aggregate* and *Taraxacum* the 1987-2013 data is unrepresentative, so 1970-2013 data has been substituted.

Date	Status	Habitat	1km^2 87+	*Latin Name*	English Name
1945+	Neo	Woodland	50	***Abies alba***	**European Silver-fir**
1987+	Cas	Woodland	1	*Abies amabilis*	Pacific Silver-fir
1987+	Cas	Woodland	26	*Abies grandis*	Giant Fir
1987+	Cas	Woodland	9	*Abies nordmanniana*	Caucasian Fir
1987+	Cas	Woodland	22	*Abies procera*	Noble Fir
1954	Cas	Ruderal	0	*Acaena caesiiglauca*	Glaucous Pirri-pirri-bur
1911+	Neo	Riverside	10	***Acaena novae-zelandiae***	**Pirri-pirri-bur**
1834+	Neo	Woodland	54	***Acer campestre***	**Field Maple**
1987+	Cas	Woodland	5	*Acer cappadocicum*	Cappadocian Maple
1987+	Cas	Woodland	1	*Acer palmatum*	Smooth Japanese-maple
1948+	Neo	Woodland	71	*Acer platanoides*	Norway Maple
1853+	Neo	Woodland	254	*Acer pseudoplatanus*	Sycamore
1987+	Native	Grassland	343	*Achillea millefolium*	Yarrow
1987+	Native	Wetland	116	***Achillea ptarmica***	**Sneezewort**
1893	Cas	Ruderal	0	*Achillea tomentosa*	Yellow Milfoil
1987+	Cas	Ruderal	1	*Acnidia tuberculata*	Acnidia
1974	Neo	Woodland	0	*Aconitum lycoctonum*	Wolf's-bane
1874+	Neo	Riverside	17	*Aconitum napellus*	Monk's-hood
2005+	Neo	Riverside	2	*Aconitum x cammarum (A. x stoerkianum) = A. napellus x variegatum*	Hybrid Monk's-hood
1874+	Neo	Aquatic	8	***Acorus calamus***	**Sweet-flag**
1965	Cas	Ruderal	0	*Actaea erythrocarpa*	European Baneberry
1987+	Native	Woodland	72	***Adoxa moschatellina***	**Moschatel**
1987+	Arc	Woodland	190	*Aegopodium podagraria*	Ground-elder
1987+	Cas	Woodland	79	*Aesculus hippocastanum*	Horse-chestnut
1987+	Arc	Arable	12	***Aethusa cynapium***	**Fool's Parsley**
1987+	Native	Grassland	51	***Agrimonia eupatoria***	**Agrimony**
1855/ 1987+	EArc/ Cas	Arable	3	***Agrostemma githago***	**Corncockle**
1987+	Native	Moorland	19	*Agrostis canina*	Velvet Bent
1987+	Native	Moorland	65	*Agrostis canina agg.*	Velvet Bent
1987+	Native	Grassland	279	*Agrostis capillaris*	Common Bent
1987+	Arc	Arable	9	*Agrostis gigantea*	Black Bent
1987+	Native	Wetland	233	*Agrostis stolonifera*	Creeping Bent
1987+	Native	Moorland	7	*Agrostis vinealis*	Brown Bent
1987+	Native	Grassland	48	***Aira caryophyllea***	**Silver Hair-grass**
1987+	Native	Grassland	127	*Aira praecox*	Early Hair-grass
1987+	Native	Woodland	146	***Ajuga reptans***	**Bugle**
1987+	Cas	Ruderal	1	*Alchemilla conjuncta*	Silver Lady's-mantle
1987+	Native	Grassland	76	***Alchemilla filicaulis subsp. vestita***	**Hairy Lady's-mantle**
1987+	Native	Grassland	145	*Alchemilla glabra*	Smooth Lady's-mantle
1987+	Native	Grassland	2	***Alchemilla glaucescens***	**Silky Lady's-mantle**
1995+	Neo	Grassland	35	*Alchemilla mollis*	Garden Lady's-mantle

1959	Neo	Grassland	0	*Alchemilla tytthantha*	Russian Lady's-mantle
1987+	Native	Grassland	37	*Alchemilla xanthochlora*	Intermediate Lady's-mantle
1987+	Native	Aquatic	31	***Alisma plantago-aquatica***	**Water-plantain**
1987+	Native	Woodland	183	*Alliaria petiolata*	Garlic Mustard
1995+	Neo	Riverside	4	***Allium carinatum***	**Keeled Garlic**
1853	Native	Grassland	0	*Allium oleraceum*	Field Garlic
1947+	Neo	Woodland	116	***Allium paradoxum***	**Few-flowered Garlic**
1987+	Cas	Arable	1	*Allium porrum*	Leek
1987+	Neo	Grassland	1	*Allium roseum*	Rosy Garlic
1777	Neo	Grassland	0	*Allium schoenoprasum*	Chives
1987+	Arc	Grassland	1	***Allium scorodoprasum***	**Sand Leek**
1987+	Native	Woodland	120	***Allium ursinum***	**Ramsons**
1987+	Arc	Grassland	10	***Allium vineale***	**Wild Onion**
1987+	Arc	Grassland	1	***Allium vineale var. compactum [umbels with bulbils only]***	**Wild Onion**
1987+	Native	Riverside	194	*Alnus glutinosa*	Alder
1987+	Neo	Woodland	19	*Alnus incana*	Grey Alder
1997+	Neo	Wetland	1	*Alopecurus aequalis*	Orange Foxtail
1987+	Native	Wetland	170	*Alopecurus geniculatus*	Marsh Foxtail
1941+	Neo	Arable	1	***Alopecurus myosuroides***	**Black-grass**
1987+	Native	Grassland	198	*Alopecurus pratensis*	Meadow Foxtail
1987+	Cas	Arable	1	***Amaranthus retroflexus***	**Common Amaranth**
1987+	Cas	Ruderal	1	*Ammi majus*	Bullwort
1987+	Native	Coast	4	***Ammophila arenaria***	**Marram**
1983+	Neo	Arable	18	***Amsinckia micrantha***	**Common Fiddleneck**
				Anacamptis	[See also *Orchis*]
1886	Native	Grassland	0	*Anacamptis pyramidalis*	Pyramidal Orchid
1987+	Native	Arable	23	***Anagallis arvensis***	**Scarlet Pimpernel**
1896	Arc	Arable	0	*Anagallis arvensis subsp. foemina*	Blue Pimpernel
1987+	Native	Wetland	1	***Anagallis tenella***	**Bog Pimpernel**
1987+	Arc	Arable	75	*Anchusa arvensis*	Bugloss
1961	Cas	Ruderal	0	*Anchusa officinalis*	Common Alkanet
1965	Cas	Woodland	0	*Anemone apennina*	Blue Anemone
1987+	Native	Woodland	112	***Anemone nemorosa***	**Wood Anemone**
1987+	Native	Wetland	254	*Angelica sylvestris*	Wild Angelica
1892+	Neo	Arable	6	***Anisantha diandra***	**Great Brome**
1987+	Arc	Arable	124	*Anisantha sterilis*	Barren Brome
1987+	Native	Moorland	5	***Antennaria dioica***	**Mountain Everlasting**
1957/ 1987+	EArc/ Cas	Arable	2	***Anthemis arvensis***	**Corn Chamomile**
1987+	Cas	Arable	1	*Anthemis cotula*	Stinking Chamomile
1987+	Native	Grassland	319	*Anthoxanthum odoratum*	Sweet Vernal-grass
1987+	Native	Grassland	4	***Anthriscus caucalis***	**Bur Parsley**
1987+	Native	Grassland	266	*Anthriscus sylvestris*	Cow Parsley
1987+	Native	Grassland	37	***Anthyllis vulneraria***	**Kidney Vetch**

1957+	Neo	Rock	6	*Antirrhinum majus*	Snapdragon
1987+	Native	Arable	44	*Aphanes arvensis*	Parsley-piert
1987+	Native	Grassland	172	*Aphanes arvensis agg.*	Parsley-piert
1987+	Native	Grassland	88	*Aphanes australis*	Slender Parsley-piert
1987+	Native	Aquatic	6	***Apium inundatum***	**Lesser Marshwort**
1987+	Native	Aquatic	1	***Apium nodiflorum***	**Fool's-water-cress**
1834+	Neo	Ruderal	10	*Aquilegia vulgaris*	Columbine
1987+	Native	Ruderal	81	*Arabidopsis thaliana*	Thale Cress
1993+	Neo	Ruderal	4	*Arabis caucasica*	Garden Arabis
1987+	Native	Grassland	6	***Arabis hirsuta***	**Hairy Rock-cress**
2005+	Neo	Woodland	1	*Aralia racemosa*	American-spikenard
1987+	Cas	Woodland	3	*Araucaria araucana*	Monkey-puzzle
1987+	Native	Grassland	213	*Arctium minus*	Lesser Burdock
1886	Native	Moorland	0	*Arctostaphylos uva-ursi*	Bearberry
1969	Neo	Ruderal	0	*Aremonia agrimonioides*	Bastard Agrimony
1968	Neo	Riverside	0	*Arenaria balearica*	Mossy Sandwort
1987+	Native	Grassland	76	*Arenaria serpyllifolia*	Thyme-leaved Sandwort
1987+	Native	Grassland	2	*Arenaria serpyllifolia subsp. leptoclados (A. leptoclados)*	Slender Sandwort
1987+	Native	Grassland	8	*Arenaria serpyllifolia subsp. serpyllifolia (A. serpyllifolia)*	Thyme-leaved Sandwort
1987+	Native	Coast	34	***Armeria maritima***	**Thrift**
1955+	Neo	Ruderal	1	*Armoracia rusticana*	Horse-radish
1987+	Native	Grassland	250	*Arrhenatherum elatius*	False Oat-grass
1987+	Native	Arable	6	***Arrhenatherum elatius var. bulbosum***	**Onion-couch Oat-grass**
				Artemisia	[See also *Seriphidium*]
1987+	Arc	Ruderal	5	***Artemisia absinthium***	**Wormwood**
1987+	Arc	Ruderal	34	***Artemisia vulgaris***	**Mugwort**
2005+	Neo	Grassland	2	*Arum italicum*	Italian Lords-and-Ladies
1829+	Neo	Woodland	45	*Arum maculatum*	Lords-and-ladies
2008+	Neo	Rock	4	*Asarina procumbens*	Trailing Snapdragon
1916	Cas	Ruderal	0	*Asarum europaeum*	Asarabacca
				Asplenium	[See also *Phyllitis*]
1987+	Native	Rock	40	*Asplenium adiantum-nigrum*	Black Spleenwort
1987+	Native	Coast	9	***Asplenium marinum***	**Sea Spleenwort**
1987+	Native	Rock	64	*Asplenium ruta-muraria*	Wall-rue
1987+	Native	Rock	80	*Asplenium trichomanes*	Maidenhair Spleenwort
1987+	Native	Rock	49	*Asplenium trichomanes subsp. quadrivalens*	Maidenhair Spleenwort
1915	Cas	Grassland	0	*Aster novae-angliae*	Hairy Michaelmas-daisy
1909+	Neo	Ruderal	7	*Aster novi-belgii*	Confused Michaelmas-daisy
1996+	Neo	Grassland	1	*Aster novi-belgii agg. [A. laevis, A. novi-belgii, A. x salignus, A. x versicolor]*	Michaelmas-daisy
1987+	Cas	Coast	1	***Aster tripolium***	**Sea Aster**

2005+	Neo	Grassland	1	*Aster x versicolor = A. laevis x novi-belgii*	Late Michaelmas-daisy
2002+	Neo	Ruderal	1	*Astilbe x arendsii = A. chinensis x japonica x rosea*	Red False-buck's-beard
1987+	Native	Coast	14	***Astragalus danicus***	**Purple Milk-vetch**
1987+	Native	Grassland	2	***Astragalus glycyphyllos***	**Wild Liquorice**
1987+	Cas	Ruderal	1	*Astrantia major*	Astrantia
1987+	Native	Woodland	232	*Athyrium filix-femina*	Lady Fern
1987+	Native	Coast	18	*Atriplex glabriuscula*	Babington's Orache
1967	Cas	Ruderal	0	*Atriplex hortensis*	Garden Orache
1987+	Native	Coast	9	***Atriplex laciniata***	**Frosted Orache**
1984+	Neo	Ruderal	19	***Atriplex littoralis***	**Grass-leaved Orache**
1987+	Native	Arable	177	*Atriplex patula*	Common Orache
1987+	Native	Ruderal	147	***Atriplex prostrata***	**Spear-leaved Orache**
1987+	Native	Ruderal	159	*Atriplex prostrata agg.*	Spear-leaved Orache
1987+	Cas	Coast	1	***Atriplex x taschereaui = A. glabriuscula x longipes***	**Taschereau's Orache**
1997+	Neo	Ruderal	15	*Aubrieta deltoidea*	Aubretia
1987+	Arc	Arable	77	*Avena fatua*	Wild Oat
1987+	Cas	Arable	33	*Avena sativa*	Oat
1872	Cas	Arable	0	*Avena strigosa*	Bristle Oat
				Avenula	[See *Helictotrichon*]
1922	Native	Aquatic	0	*Baldellia ranunculoides*	Lesser Water-plantain
1987+	Arc	Grassland	7	***Ballota nigra***	**Black Horehound**
1987+	Neo	Ruderal	13	*Barbarea intermedia*	Medium-flowered Winter-cress
1922	Cas	Ruderal	0	*Barbarea verna*	American Winter-cress
1987+	Native	Riverside	73	*Barbarea vulgaris*	Winter-cress
1987+	Native	Grassland	330	*Bellis perennis*	Daisy
1987+	Cas	Woodland	1	*Berberis aggregata*	Clustered Barberry
1987+	Cas	Woodland	2	*Berberis thunbergii*	Thunberg's Barberry
1878+	Neo	Woodland	5	*Berberis vulgaris*	Barberry
1987+	Cas	Woodland	3	*Berberis wilsoniae*	Mrs Wilson's Barberry
1987+	Cas	Woodland	1	*Berberis x stenophylla = B. darwinii x empetrifolia*	Hedge Barberry
1987+	Native	Aquatic	39	***Berula erecta***	**Lesser Water-parsnip**
1987+	Cas	Arable	1	*Beta vulgaris*	Beet
1987+	Cas	Coast	1	***Beta vulgaris subsp. maritima***	**Sea Beet**
1987+	Cas	Arable	1	*Beta vulgaris subsp. vulgaris*	Root Beet
				Betonica	[See *Stachys*]
1946+	Neo	Woodland	105	***Betula pendula***	**Silver Birch**
1987+	Native	Woodland	210	***Betula pubescens***	**Downy Birch**
1987+	Cas	Woodland	1	*Betula pubescens subsp. tortuosa*	Downy Birch
1987+	Native	Aquatic	4	***Bidens cernua***	**Nodding Bur-marigold**
1987+	Native	Moorland	136	*Blechnum spicant*	Hard Fern
1987+	Native	Wetland	7	***Blysmus compressus***	**Flat-sedge**
1987+	Native	Coast	1	***Blysmus rufus***	**Saltmarsh Flat-sedge**

1829+	Neo	Arable	15	***Borago officinalis***	**Borage**
1987+	Native	Grassland	6	***Botrychium lunaria***	**Moonwort**
2012+	Neo	Ruderal	1	*Brachypodium pinnatum*	Heath False-brome
1987+	Native	Woodland	130	***Brachypodium sylvaticum***	**False-brome**
1987+	Cas	Arable	34	*Brassica napus*	Rape
1987+	Cas	Arable	43	*Brassica napus subsp. oleifera*	Oil-seed Rape
1987+	Cas	Arable	1	*Brassica napus subsp. rapifera*	Swede
1807	Cas	Arable	0	*Brassica nigra*	Black Mustard
1955+	Neo	Coast	1	*Brassica oleracea*	Cabbage
1987+	Cas	Arable	3	*Brassica oleracea cultivated variants*	Cabbage
1987+	Cas	Arable	1	*Brassica oleracea var. gemmifera*	Brussels-sprout
1987+	Cas	Arable	3	*Brassica oleracea var. viridis*	Kale
1987+	Cas	Arable	6	*Brassica rapa*	Turnip
2003	Error ?	Riverside	1	*Brassica rapa subsp. campestris*	Wild Turnip
1987+	Cas	Arable	3	*Brassica rapa subsp. rapa*	Turnip
1956	Cas	Ruderal	0	*Briza maxima*	Great Quaking-grass
1987+	Native	Grassland	115	***Briza media***	**Quaking-grass**
1966+	Neo	Grassland	1	*Bromopsis erecta*	Upright Brome
1987+	Native	Woodland	65	***Bromopsis ramosa***	**Hairy Brome**
1893/ 1987+	EArc/ Cas	Arable	1	***Bromus commutatus***	**Meadow Brome**
1987+	Native	Grassland	135	*Bromus hordeaceus*	Soft-brome
1987+	Native	Grassland	102	*Bromus hordeaceus subsp. hordeaceus*	Soft-brome
1987+	Data deficient	Grassland	2	*Bromus hordeaceus subsp. longipedicellatus*	Soft-brome
1960	Data deficient	Grassland	0	*Bromus hordeaceus subsp. thominei*	Soft-brome
1963	Neo	Grassland	0	*Bromus lepidus*	Slender Soft-brome
1893	Cas	Arable	0	*Bromus racemosus*	Smooth Brome
1853/ 1987+	EArc/ Cas	Arable	1	***Bromus secalinus***	**Rye Brome**
1958+	Neo	Ruderal	29	***Buddleja davidii***	**Butterfly-bush**
1958+	Neo	Aquatic	29	***Butomus umbellatus***	**Flowering-rush**
1987+	Cas	Woodland	29	*Buxus sempervirens*	Box
1987+	Native	Coast	8	***Cakile maritima***	**Sea Rocket**
1987+	Cas	Ruderal	9	*Calendula officinalis*	Pot Marigold
1987+	Native	Aquatic	43	*Callitriche agg.*	Water-starwort
1987+	Native	Aquatic	47	***Callitriche hamulata (C. brutia subsp. hamulata)***	**Intermediate Water-starwort**
1987+	Native	Aquatic	28	***Callitriche hermaphroditica***	**Autumnal Water-starwort**
1987+	Native	Aquatic	13	*Callitriche platycarpa*	Various-leaved Water-starwort
1987+	Native	Aquatic	70	*Callitriche stagnalis*	Common Water-starwort
1987+	Native	Aquatic	145	*Callitriche stagnalis agg.*	Common Water-starwort
1987+	Native	Moorland	207	*Calluna vulgaris*	Heather

1987+	Native	Wetland	280	*Caltha palustris*	Marsh Marigold
1981+	Neo	Ruderal	10	*Calystegia pulchra*	Hairy Bindweed
1829+	Neo	Ruderal	80	***Calystegia sepium***	**Hedge Bindweed**
1957+	Neo	Ruderal	26	***Calystegia silvatica***	**Large Bindweed**
1931	Cas	Arable	0	*Camelina sativa*	Gold-of-pleasure
1961	Cas	Grassland	0	*Campanula glomerata*	Clustered Bellflower
2010+	Neo	Ruderal	1	*Campanula lactiflora*	Milky Bellflower
1987+	Native	Woodland	60	***Campanula latifolia***	**Giant Bellflower**
1956	Neo	Grassland	0	*Campanula patula*	Spreading Bellflower
1987+	Cas	Ruderal	3	*Campanula persicifolia*	Peach-leaved Bellflower
2008+	Neo	Rock	3	*Campanula portenschlagiana*	Adria Bellflower
1998+	Neo	Rock	5	*Campanula poscharskyana*	Trailing Bellflower
1893+	Neo	Ruderal	2	*Campanula rapunculoides*	Creeping Bellflower
1960	Neo	Ruderal	0	*Campanula rapunculus*	Rampion Bellflower
1987+	Native	Grassland	231	*Campanula rotundifolia*	Harebell
2009+	Neo	Grassland	1	*Campanula trachelium*	Nettle-leaved Bellflower
1987+	Arc	Arable	257	*Capsella bursa-pastoris*	Shepherd's-purse
1987+	Native	Riverside	86	***Cardamine amara***	**Large Bitter-cress**
1991+	Neo	Ruderal	3	***Cardamine corymbosa***	**New Zealand Bitter-cress**
1987+	Native	Riverside	162	*Cardamine flexuosa*	Wavy Bitter-cress
1987+	Native	Ruderal	118	*Cardamine hirsuta*	Hairy Bitter-cress
1987+	Native	Wetland	275	*Cardamine pratensis*	Cuckooflower
2009+	Neo	Riverside	2	*Cardamine raphanifolia*	Greater Cuckooflower
1987+	Native	Grassland	117	*Carduus crispus*	Welted Thistle
1987+	Native	Grassland	2	***Carduus nutans***	**Musk Thistle**
1987+	Native	Grassland	23	***Carduus tenuiflorus***	**Slender Thistle**
1987+	Native	Riverside	20	***Carex acuta***	**Slender Tufted-sedge**
1987+	Native	Wetland	47	***Carex acutiformis***	**Lesser Pond-sedge**
1915	Native	Riverside	0	*Carex aquatilis*	Water Sedge
1987+	Native	Coast	3	***Carex arenaria***	**Sand Sedge**
1987+	Native	Moorland	74	*Carex binervis*	Green-ribbed Sedge
1987+	Native	Grassland	72	***Carex caryophyllea***	**Spring Sedge**
1987+	Native	Moorland	34	***Carex curta (C. canescens)***	**White Sedge**
1987+	Native	Wetland	1	***Carex diandra***	**Lesser Tussock-sedge**
1987+	Native	Wetland	20	***Carex dioica***	**Dioecious Sedge**
1987+	Native	Coast	10	***Carex distans***	**Distant Sedge**
1987+	Native	Wetland	144	***Carex disticha***	**Brown Sedge**
1987+	Neo	Woodland	3	***Carex divulsa subsp. leersii***	**Leers' Sedge**
1987+	Native	Moorland	103	*Carex echinata*	Star Sedge
1987+	Native	Coast	4	***Carex extensa***	**Long-bracted Sedge**
1987+	Native	Wetland	175	***Carex flacca***	**Glaucous Sedge**
1987+	Native	Grassland	93	*Carex hirta*	Hairy Sedge
1987+	Native	Wetland	37	***Carex hostiana***	**Tawny Sedge**
1987+	Native	Woodland	9	***Carex laevigata***	**Smooth-stalked Sedge**
1987+	Native	Wetland	1	***Carex lasiocarpa***	**Slender Sedge**

1989	Native	Wetland	1	*Carex limosa*	Bog-sedge
1910	Native	Wetland	0	*Carex magellanica*	Tall Bog-sedge
1987+	Native	Grassland	7	***Carex muricata subsp. lamprocarpa (C. m. subsp. pairae)***	**Prickly Sedge**
1878	Neo	Grassland	0	***Carex muricata subsp. muricata***	**Prickly Sedge**
1987+	Native	Wetland	144	*Carex nigra*	Common Sedge
1987+	Native	Coast	18	***Carex otrubae***	**False Fox-sedge**
1987+	Native	Grassland	123	*Carex ovalis (Carex leporina)*	Oval Sedge
1987+	Native	Woodland	6	***Carex pallescens***	**Pale Sedge**
1987+	Native	Wetland	139	*Carex panicea*	Carnation Sedge
1987+	Native	Wetland	37	***Carex paniculata***	**Greater Tussock-sedge**
1987+	Native	Woodland	17	***Carex pendula***	**Pendulous Sedge**
1987+	Native	Grassland	115	*Carex pilulifera*	Pill Sedge
1987+	Native	Moorland	78	***Carex pulicaris***	**Flea Sedge**
1882	Error			[*Carex punctata*] [Bournemouth, Dorset not Burnmouth, Berwickshire]	Dotted Sedge
1987+	Native	Woodland	18	***Carex remota***	**Remote Sedge**
1987+	Native	Wetland	21	***Carex riparia***	**Greater Pond-sedge**
1987+	Native	Wetland	136	*Carex rostrata*	Bottle Sedge
1987+	Native	Woodland	42	***Carex sylvatica***	**Wood Sedge**
1987+	Native	Wetland	13	***Carex vesicaria***	**Bladder Sedge**
1987+	Native	Wetland	55	***Carex viridula subsp. brachyrrhyncha (C. lepidocarpa)***	**Long-stalked Yellow-sedge**
1987+	Native	Wetland	60	*Carex viridula subsp. oedocarpa (C. demissa)*	Common Yellow-sedge
1987+	Native	Wetland	1	***Carex x csomadensis = C. riparia x vesicaria***	**A hybrid Sedge**
1987+	Native	Wetland	6	***Carex x fulva = C. hostiana x viridula (lepidocarpa)***	**A hybrid Sedge**
1987+	Native	Wetland	2	***Carex x involuta = C. rostrata x vesicaria***	**A hybrid Sedge**
1987+	Native	Coast	10	***Carlina vulgaris***	**Carline Thistle**
1860+	Neo	Woodland	29	*Carpinus betulus*	Hornbeam
1961	Cas	Ruderal	0	*Carrichtera annua*	Cress Rocket
1987+	Cas	Woodland	22	*Castanea sativa*	Sweet Chestnut
1987+	Native	Aquatic	20	***Catabrosa aquatica***	**Whorl-grass**
1987+	Native	Coast	7	***Catapodium marinum***	**Sea Fern-grass**
1987+	Native	Coast	6	***Catapodium rigidum***	**Fern-grass**
1987+	Cas	Woodland	4	*Cedrus atlantica*	Atlas Cedar
1987+	Cas	Woodland	6	***Cedrus deodara***	**Deodar**
1987+	Cas	Woodland	3	***Cedrus libani***	**Cedar-of-Lebanon**
1987+	Arc	Arable	15	***Centaurea cyanus***	**Cornflower**
1993+	Neo	Grassland	7	*Centaurea montana*	Perennial Cornflower
1987+	Native	Grassland	296	*Centaurea nigra*	Common Knapweed
1987+	Native	Grassland	4	*Centaurea nigra var. radiata*	Common Knapweed
1962+	Neo	Grassland	3	*Centaurea scabiosa*	Greater Knapweed

1987+	Native	Coast	11	***Centaurium erythraea***	**Common Centaury**
1939+	Neo	Coast	24	***Centranthus ruber***	**Red Valerian**
1987+	Cas	Grassland	2	*Cephalaria gigantea*	Giant Scabious
1987+	Native	Grassland	15	***Cerastium arvense***	**Field Mouse-ear**
1987+	Native	Coast	39	*Cerastium diffusum*	Sea Mouse-ear
1987+	Native	Grassland	375	*Cerastium fontanum*	Common Mouse-ear
1987+	Native	Arable	164	*Cerastium glomeratum*	Sticky Mouse-ear
1987+	Native	Grassland	16	***Cerastium semidecandrum***	**Little Mouse-ear**
1957+	Neo	Ruderal	22	*Cerastium tomentosum*	Snow-in-summer
2011+	Neo	Grassland	1	***Cerastium x maueri = C. arvense x tomentosum (Cerastium x maueri nom. nud.)***	**Hybrid Mouse-ear**
1987+	Native	Woodland	46	***Ceratocapnos claviculata***	**Climbing Corydalis**
1981+	Neo	Aquatic	3	*Ceratophyllum demersum*	Rigid Hornwort
1987+	Cas	Woodland	1	*Cercis siliquastrum*	Judas-tree
1881+	Neo	Rock	2	*Ceterach officinarum (Asplenium ceterach)*	Rustyback Fern
1829+	Neo	Ruderal	2	*Chaenorhinum minus*	Small Toadflax
1987+	Native	Grassland	106	*Chaerophyllum temulum*	Rough Chervil
1987+	Cas	Woodland	42	*Chamaecyparis lawsoniana*	Lawson's Cypress
1987+	Cas	Woodland	1	*Chamaecyparis nootkatensis (Xanthocyparis nootkatensis)*	Nootka Cypress
1987+	Cas	Woodland	2	*Chamaecyparis pisifera*	Sawara Cypress
1853	Neo	Arable	0	*Chamaemelum nobile*	Chamomile
1987+	Native	Woodland	344	*Chamerion angustifolium*	Rosebay Willowherb
1987+	Arc	Ruderal	7	***Chelidonium majus***	**Greater Celandine**
1987+	Native	Arable	187	*Chenopodium album*	Fat-hen
1987+	Arc	Ruderal	23	***Chenopodium bonus-henricus***	**Good-King-Henry**
1968	Cas	Ruderal	0	*Chenopodium glaucum*	Oak-leaved Goosefoot
1987+	Cas	Ruderal	1	***Chenopodium polyspermum***	**Many-seeded Goosefoot**
1987+	Cas	Arable	1	***Chenopodium probstii***	**Probst's Goosefoot**
1987+	Cas	Arable	16	***Chenopodium quinoa***	**Quinoa**
1987+	Cas	Arable	5	*Chenopodium rubrum*	Red Goosefoot
1833	Cas	Ruderal	0	*Chenopodium urbicum*	Upright Goosefoot
1970	Cas	Ruderal	0	*Chenopodium vulvaria*	Stinking Goosefoot
2005+	Neo	Riverside	2	*Chionodoxa forbesii (Scilla forbesii)*	Glory-of-the-snow
2012+	Neo	Woodland	1	*Chionodoxa sardensis (Scilla sardensis)*	Lesser Glory-of-the-snow
1987+	Arc	Arable	13	***Chrysanthemum segetum (Glebionis segetum)***	**Corn Marigold**
1987+	Native	Woodland	86	***Chrysosplenium alternifolium***	**Alternate-leaved Golden-saxifrage**
1987+	Native	Woodland	222	*Chrysosplenium oppositifolium*	Opposite-leaved Golden-saxifrage
1960+	Neo	Grassland	24	***Cicerbita macrophylla***	**Common Blue-sow-thistle**
1987+	Cas	Grassland	10	***Cichorium intybus***	**Chicory**
1987+	Native	Wetland	2	***Cicuta virosa***	**Cowbane**

1987+	Native	Woodland	90	*Circaea lutetiana*	Enchanter's-nightshade
1987+	Native	Woodland	2	***Circaea x intermedia = C. alpina x lutetiana***	**Upland Enchanter's-nightshade**
1987+	Native	Grassland	414	*Cirsium arvense*	Creeping Thistle
1987+	Native	Wetland	13	***Cirsium heterophyllum***	**Melancholy Thistle**
2001+	Neo	Wetland	1	*Cirsium oleraceum*	Cabbage Thistle
1987+	Native	Wetland	326	*Cirsium palustre*	Marsh Thistle
1987+	Native	Grassland	368	*Cirsium vulgare*	Spear Thistle
1987+	Native	Grassland	3	*Cirsium x celakovskianum = C. arvense x palustre*	A hybrid Thistle
1853	Native	Wetland	0	*Cladium mariscus*	Great Fen-sedge
1937+	Neo	Woodland	4	*Claytonia perfoliata*	Spring-beauty
1936+	Neo	Woodland	67	***Claytonia sibirica***	**Pink Purslane**
1871+	Neo	Woodland	6	*Clematis vitalba*	Traveller's-joy
1874	Cas	Grassland	0	*Clinopodium acinos*	Basil Thyme
1987+	Native	Grassland	9	***Clinopodium vulgare***	**Wild Basil**
1987+	Native	Coast	39	***Cochlearia danica***	**Danish Scurvygrass**
1987+	Native	Coast	1	*Cochlearia danica x officinalis*	Hybrid Scurvygrass
2006+	Neo	Riverside	2	***Cochlearia megalosperma***	**Tall Scurvygrass**
1987+	Native	Coast	37	***Cochlearia officinalis***	**Common Scurvygrass**
1987+	Native	Coast	3	***Cochlearia officinalis subsp. scotica***	**Scottish Scurvygrass**
1947	Native	Grassland	0	*Coeloglossum viride*	Frog Orchid
1987+	Cas	Grassland	5	*Colchicum autumnale*	Meadow Saffron
				Comarum	[See *Potentilla*]
1987+	Arc	Ruderal	69	***Conium maculatum***	**Hemlock**
1987+	Native	Grassland	169	***Conopodium majus***	**Pignut**
1931	Cas	Ruderal	0	*Conringia orientalis*	Hare's-ear Mustard
1987+	Native	Rock	1	***Convallaria majalis***	**Lily-of-the-valley**
1987+	Arc	Ruderal	17	***Convolvulus arvensis***	**Field Bindweed**
1992+	Neo	Ruderal	4	*Conyza canadensis*	Canadian Fleabane
1987+	Native	Woodland	3	***Corallorhiza trifida***	**Coralroot Orchid**
1987+	Cas	Ruderal	1	*Coriandrum sativum*	Coriander
1990+	Neo	Woodland	2	*Cornus alba*	White Dogwood
1893+	Neo	Woodland	9	*Cornus sanguinea*	Dogwood
1993+	Neo	Woodland	13	*Cornus sericea*	Red-osier Dogwood
1987+	Cas	Ruderal	1	*Coronopus didymus (Lepidium didymum)*	Lesser Swine-cress
1987+	Arc	Arable	7	***Coronopus squamatus (Lepidium coronopus)***	**Swine-cress**
2013+	Neo	Ruderal	1	*Cortaderia selloana*	Pampas-grass
1930	Cas	Woodland	0	*Corydalis solida*	Bird-in-a-bush
1987+	Native	Woodland	144	***Corylus avellana***	**Hazel**
1987+	Cas	Rock	1	*Cotoneaster hjelmqvistii*	Hjelmqvist's Cotoneaster
1960+	Neo	Rock	26	*Cotoneaster horizontalis*	Wall Cotoneaster
1956+	Neo	Coast	1	***Cotoneaster integrifolius***	**Small-leaved Cotoneaster**
1987+	Cas	Woodland	1	*Cotoneaster rehderi*	Bullate Cotoneaster

1987+	Neo	Grassland	24	*Cotoneaster simonsii*	Himalayan Cotoneaster
1987+	Cas	Rock	8	*Cotoneaster sp.*	A Cotoneaster
1987+	Cas	Woodland	3	*Cotoneaster sternianus*	Stern's Cotoneaster
2012+	Neo	Ruderal	1	*Cotoneaster thymifolius*	Thyme-leaved Cotoneaster
1987+	Cas	Woodland	5	*Cotoneaster x watereri = C. frigidus x salicifolius*	Waterer's Cotoneaster
1962	Neo	Grassland	0	*Cotula squalida*	Leptinella
1987+	Cas	Riverside	13	***Crambe hispanica***	**Oil-seed Crambe**
1987+	Cas	Coast	3	***Crambe maritima***	**Sea-kale**
1998+	Neo	Aquatic	3	***Crassula helmsii***	**New Zealand Pigmyweed**
1987+	Cas	Woodland	9	***Crataegus laevigata***	**Midland Hawthorn**
1987+	Native	Woodland	325	***Crataegus monogyna***	**Hawthorn**
1987+	Cas	Woodland	23	***Crataegus x media = C. laevigata x monogyna***	**Hybrid Hawthorn**
1997+	Neo	Ruderal	2	*Crepis biennis*	Rough Hawk's-beard
1987+	Native	Grassland	128	*Crepis capillaris*	Smooth Hawk's-beard
1987+	Native	Grassland	1	***Crepis mollis***	**Northern Hawk's-beard**
1987+	Native	Wetland	112	***Crepis paludosa***	**Marsh Hawk's-beard**
1994+	Neo	Coast	1	*Crocosmia paniculata*	Aunt-Eliza
1960+	Neo	Coast	18	***Crocosmia x crocosmiiflora = C. aurea x potsii***	**Montbretia**
2004+	Neo	Grassland	7	*Crocus tommasinianus*	Early Crocus
1987+	Cas	Grassland	6	*Crocus vernus*	Spring Crocus
1987+	Cas	Grassland	3	*Crocus x stellaris (C. x luteus) = C. angustifolius x flavus*	Yellow Crocus
1987+	Native	Grassland	270	*Cruciata laevipes*	Crosswort
1987+	Native	Rock	3	***Cryptogramma crispa***	**Parsley Fern**
1987+	Cas	Woodland	2	*Cryptomeria japonica*	Japanese Red-cedar
1987+	Cas	Woodland	1	*Cupressus macrocarpa*	Monterey Cypress
1959	Cas	Ruderal	0	*Cuscuta campestris*	Yellow Dodder
1889	Cas	Moorland	0	*Cuscuta epithymum*	Dodder
2007+	Neo	Rock	1	*Cymbalaria hepaticifolia*	Corsican Toadflax
1893+	Neo	Rock	51	*Cymbalaria muralis*	Ivy-leaved Toadflax
1997+	Neo	Ruderal	7	*Cymbalaria pallida*	Italian Toadflax
1987+	Native	Coast	2	***Cynoglossum officinale***	**Hound's-tongue**
1987+	Native	Grassland	260	*Cynosurus cristatus*	Crested Dog's-tail
1987+	Native	Rock	15	***Cystopteris fragilis***	**Brittle Bladder-fern**
1992+	Neo	Grassland	2	*Cytisus multiflorus*	White Broom
1987+	Native	Grassland	172	*Cytisus scoparius*	Broom
2009+	Neo	Grassland	2	*Cytisus striatus*	Hairy-fruited Broom
1987+	Native	Grassland	348	*Dactylis glomerata*	Cock's-foot
1987+	Native	Grassland	78	***Dactylorhiza fuchsii***	**Common Spotted-orchid**
1987+	Native	Wetland	16	***Dactylorhiza incarnata***	**Early Marsh-orchid**
1987+	Native	Wetland	7	***Dactylorhiza incarnata subsp. incarnata***	**Early Marsh-orchid**

1987+	Native	Wetland	4	***Dactylorhiza incarnata subsp. pulchella***	**Early Marsh-orchid**
1987+	Native	Moorland	62	***Dactylorhiza maculata***	**Heath Spotted-orchid**
1987+	Native	Wetland	78	***Dactylorhiza purpurella***	**Northern Marsh-orchid**
1987+	Native	Wetland	1	***Dactylorhiza x carnea = D. incarnata x maculata***	**A hybrid Marsh-orchid**
1987+	Native	Wetland	6	***Dactylorhiza x formosa = D. maculata x purpurella***	**A hybrid Marsh-orchid**
1987+	Native	Wetland	2	***Dactylorhiza x latirella = D. incarnata x purpurella***	**A hybrid Marsh-orchid**
1987+	Native	Moorland	3	***Dactylorhiza x transiens = D. fuchsii x maculata***	**A hybrid Marsh-orchid**
1987+	Native	Wetland	7	***Dactylorhiza x venusta = D. fuchsii x purpurella***	**A hybrid Marsh-orchid**
1987+	Native	Moorland	71	*Danthonia decumbens*	Heath-grass
1829+	Neo	Woodland	21	***Daphne laureola***	**Spurge-laurel**
2013+	Neo	Aquatic	1	***Darmera peltata***	**Indian-rhubarb**
1987+	Cas	Ruderal	3	***Datura stramonium***	**Thorn-apple**
1987+	Native	Grassland	9	***Daucus carota subsp. carota***	**Wild Carrot**
1987+	Native	Grassland	342	*Deschampsia cespitosa*	Tufted Hair-grass
1987+	Native	Moorland	200	*Deschampsia flexuosa*	Wavy Hair-grass
1977	Cas	Ruderal	0	*Descurainia sophia*	Flixweed
1987+	Native	Grassland	12	***Dianthus deltoides***	**Maiden Pink**
2010+	Neo	Woodland	1	*Dicentra formosa*	Bleeding-heart
1987+	Native	Moorland	220	*Digitalis purpurea*	Foxglove
1987+	Native	Moorland	13	***Diphasiastrum alpinum***	**Alpine Clubmoss**
1892	Native	Moorland	0	*Diphasiastrum complanatum*	Issler's Clubmoss
1960	Cas	Ruderal	0	*Diplotaxis muralis*	Annual Wall-rocket
2009+	Neo	Ruderal	1	*Diplotaxis tenuifolia*	Perennial Wall-rocket
1831+	Neo	Grassland	51	***Dipsacus fullonum***	**Wild Teasel**
1987+	Cas	Arable	1	*Dipsacus laciniatus*	Cut-leaved Teasel
1857+	Neo	Woodland	64	***Doronicum pardalianches***	**Leopard's-bane**
1878+	Neo	Woodland	8	*Doronicum plantagineum*	Plantain-leaved Leopard's-bane
2012+	Neo	Woodland	1	*Doronicum x excelsum = D. columnae x pardalianches x plantagineum*	Harpur-Crewe's Leopard's-bane
1962+	Neo	Ruderal	3	*Draba muralis*	Wall Whitlowgrass
1828	Native	Moorland	0	*Drosera anglica*	Great Sundew
1987+	Native	Moorland	21	***Drosera rotundifolia***	**Round-leaved Sundew**
1987+	Native	Rock	159	*Dryopteris affinis (D. affinis agg.)*	Scaly Male-fern
1987+	Native	Rock	3	*Dryopteris affinis subsp. affinis (D. affinis)*	Scaly Male-fern
1987+	Native	Rock	4	*Dryopteris affinis subsp. borreri (D. borreri)*	Borrer's Male-fern
1987+	Native	Wetland	50	***Dryopteris carthusiana***	**Narrow Buckler-fern**
1987+	Native	Woodland	304	*Dryopteris dilatata*	Broad Buckler-fern
1987+	Native	Woodland	328	*Dryopteris filix-mas*	Common Male-fern

1987+	Native	Rock	1	***Dryopteris oreades***	**Mountain Male-fern**
1987+	Native	Woodland	1	*Dryopteris x complexa = D. affinis x filix-mas*	Hybrid Male-fern
1987+	Native	Woodland	9	*Dryopteris x deweveri = D. carthusiana x dilatata*	A hybrid Buckler-fern
1987+	Cas	Arable	1	***Echinochloa crus-galli***	**Cockspur**
1960+	Neo	Grassland	6	*Echinops exaltatus*	Globe-thistle
1987+	Arc	Rock	18	***Echium vulgare***	**Viper's-bugloss**
1853	Native	Wetland	0	*Eleocharis multicaulis*	Many-stalked Spike-rush
1987+	Native	Aquatic	125	*Eleocharis palustris*	Common Spike-rush
1987+	Native	Wetland	22	***Eleocharis quinqueflora***	**Few-flowered Spike-rush**
1875	Native	Aquatic	0	*Eleogiton fluitans*	Floating Club-rush
1842+	Neo	Aquatic	47	***Elodea canadensis***	**Canadian Waterweed**
2004+	Neo	Aquatic	8	***Elodea nuttallii***	**Nuttall's Waterweed**
1987+	Native	Woodland	34	***Elymus caninus***	**Bearded Couch**
1987+	Native	Coast	10	***Elytrigia juncea***	**Sand Couch**
1987+	Native	Arable	183	*Elytrigia repens*	Common Couch
1987+	Native	Arable	12	*Elytrigia repens subsp. repens var. aristata*	Common Couch
1987+	Native	Coast	1	***Elytrigia x laxa = E. juncea x repens***	**A hybrid Couch**
1987+	Native	Moorland	102	*Empetrum nigrum*	Crowberry
1955	Native	Moorland	0	*Empetrum nigrum subsp. nigrum*	Crowberry
1938+	Neo	Moorland	54	***Epilobium brunnescens***	**New Zealand Willowherb**
1969+	Neo	Ruderal	149	*Epilobium ciliatum*	American Willowherb
1987+	Native	Riverside	236	*Epilobium hirsutum*	Great Willowherb
1987+	Native	Ruderal	136	*Epilobium montanum*	Broad-leaved Willowherb
1987+	Native	Wetland	207	*Epilobium obscurum*	Short-fruited Willowherb
1987+	Native	Wetland	148	*Epilobium palustre*	Marsh Willowherb
1987+	Native	Riverside	38	*Epilobium parviflorum*	Hoary Willowherb
1987+	Native	Woodland	12	***Epilobium roseum***	**Pale Willowherb**
1987+	Native	Ruderal	1	*Epilobium x interjectum = E. ciliatum x montanum*	A hybrid Willowherb
1888	Native	Riverside	0	*Epilobium x subhirsutum = E. hirsutum x parviflorum*	A hybrid Willowherb
1982	Native	Woodland	0	*Epipactis helleborine*	Broad-leaved Helleborine
1836	Native	Wetland	0	*Epipactis palustris*	Marsh Helleborine
1987+	Native	Arable	283	*Equisetum arvense*	Field Horsetail
1987+	Native	Wetland	131	*Equisetum fluviatile*	Water Horsetail
1836	Native	Wetland	0	*Equisetum hyemale*	Rough Horsetail
1987+	Native	Wetland	127	*Equisetum palustre*	Marsh Horsetail
1987+	Native	Woodland	37	***Equisetum sylvaticum***	**Wood Horsetail**
1987+	Native	Coast	14	***Equisetum telmateia***	**Great Horsetail**
1987+	Native	Wetland	6	***Equisetum x litorale = E. arvense x fluviatile***	**Shore Horsetail**
1869+	Neo	Woodland	16	*Eranthis hyemalis*	Winter Aconite

1987+	Native	Moorland	117	*Erica cinerea*	Bell Heather
1987+	Native	Moorland	96	***Erica tetralix***	**Cross-leaved Heath**
1994+	Neo	Coast	2	*Erigeron glaucus*	Seaside Daisy
1946+	Neo	Rock	6	*Erinus alpinus*	Fairy Foxglove
1987+	Native	Moorland	77	*Eriophorum angustifolium*	Common Cottongrass
1987+	Native	Wetland	12	***Eriophorum latifolium***	**Broad-leaved Cottongrass**
1987+	Native	Moorland	74	*Eriophorum vaginatum*	Hare's-tail Cottongrass
1987+	Native	Grassland	16	***Erodium cicutarium***	**Common Stork's-bill**
1987+	Native	Grassland	28	*Erophila glabrescens*	Glabrous Whitlowgrass
1987+	Native	Coast	1	***Erophila majuscula***	**Hairy Whitlowgrass**
1987+	Native	Grassland	21	*Erophila verna*	Common Whitlowgrass
1987+	Native	Grassland	103	*Erophila verna agg.*	Common Whitlowgrass
1987+	Cas	Ruderal	1	*Eruca vesicaria*	Garden Rocket
1866+	Neo	Arable	9	*Erysimum cheiranthoides*	Treacle Mustard
1853+	Neo	Rock	8	*Erysimum cheiri*	Wallflower
2002+	Neo	Woodland	1	*Erythronium dens-canis*	Dog's-tooth-violet
1987+	Cas	Coast	2	*Escallonia macrantha (E. rubra var. macrantha)*	Escallonia
1987+	Cas	Ruderal	1	*Eschscholzia californica*	Californian Poppy
1987+	Native	Woodland	14	***Euonymus europaeus***	**Spindle**
1905	Cas	Woodland	0	*Euonymus latifolius*	Large-leaved Spindle
1987+	Native	Coast	32	***Eupatorium cannabinum***	**Hemp-agrimony**
1956+	Neo	Ruderal	3	*Euphorbia cyparissias*	Cypress Spurge
1999+	Neo	Ruderal	1	*Euphorbia dulcis*	Sweet Spurge
1916	Neo	Ruderal	0	*Euphorbia esula*	Leafy Spurge
1957	Arc	Arable	0	*Euphorbia exigua*	Dwarf Spurge
1987+	Arc	Arable	97	*Euphorbia helioscopia*	Sun Spurge
1987+	Cas	Ruderal	3	*Euphorbia lathyris*	Caper Spurge
1987+	Arc	Ruderal	49	*Euphorbia peplus*	Petty Spurge
1987+	Native	Grassland	30	*Euphrasia arctica subsp. borealis*	Eyebright
1987+	Native	Grassland	8	*Euphrasia arctica x confusa*	Eyebright
1987+	Native	Grassland	2	*Euphrasia arctica x nemorosa*	Eyebright
1987+	Native	Grassland	61	*Euphrasia confusa*	Eyebright
1987+	Native	Moorland	3	*Euphrasia confusa x micrantha*	Eyebright
1987+	Native	Grassland	4	*Euphrasia confusa x nemorosa*	Eyebright
1987+	Native	Wetland	3	*Euphrasia confusa x scottica*	Eyebright
1987+	Native	Moorland	19	***Euphrasia micrantha***	**Eyebright**
1987+	Native	Grassland	9	*Euphrasia nemorosa*	Eyebright
1960	Native	Moorland	0	*Euphrasia nemorosa x micrantha*	Eyebright
1987+	Native	Wetland	1	*Euphrasia nemorosa x scottica*	Eyebright
1987+	Native	Coast	1	*Euphrasia nemorosa x tetraquetra*	Eyebright
1987+	Native	Grassland	152	*Euphrasia officinalis agg.*	Eyebright
1907	Native	Grassland	0	*Euphrasia rostkoviana (E. officinalis)*	Eyebright
1987+	Native	Wetland	24	***Euphrasia scottica***	**Eyebright**
1987+	Native	Coast	2	***Euphrasia tetraquetra***	**Eyebright**

1987+	Native	Wetland	2	*Euphrasia x electa = E. micrantha x scottica*	Eyebright
1987+	Native	Wetland	1	*Euphrasia x venusta = E. arctica subsp. borealis x scottica*	Eyebright
1987+	Cas	Ruderal	1	*Fagopyrum esculentum*	Buckwheat
1987+	Cas	Woodland	1	*Fagus orientalis*	Oriental Beech
1939+	Neo	Woodland	221	*Fagus sylvatica*	Beech
1959+	Neo	Ruderal	1	*Fallopia baldschuanica*	Russian-vine
1987+	Arc	Arable	119	*Fallopia convolvulus*	Black-bindweed
1958+	Neo	Riverside	48	***Fallopia japonica***	**Japanese Knotweed**
1960+	Neo	Woodland	3	*Fallopia sachalinensis*	Giant Knotweed
1987+	Native	Grassland	123	*Festuca arundinacea (Schedonorus arundinaceus)*	Tall Fescue
2013	Native	Grassland	14	*Festuca filiformis*	Fine-leaved Sheep's-fescue
1987+	Native	Woodland	46	***Festuca gigantea (Schedonorus giganteus)***	**Giant Fescue**
1980+	Neo	Woodland	1	***Festuca heterophylla***	**Various-leaved Fescue**
1987+	Native	Grassland	158	*Festuca ovina*	Sheep's-fescue
1987+	Native	Grassland	1	*Festuca ovina subsp. hirtula*	Sheep's-fescue
1987+	Data deficient	Grassland	1	*Festuca ovina subsp. ophioliticola*	Sheep's-fescue
1987+	Native	Grassland	4	*Festuca ovina subsp. ovina*	Sheep's-fescue
1987+	Native	Grassland	64	***Festuca pratensis (Schedonorus pratensis)***	**Meadow Fescue**
1987+	Native	Grassland	286	*Festuca rubra*	Red Fescue
1987+	Native	Coast	16	*Festuca rubra subsp. juncea*	Red Fescue
1839	Native	Moorland	0	*Festuca vivipara*	Viviparous Fescue
				Ficaria	[See *Ranunculus*]
1987+	Native	Grassland	8	***Filago minima***	**Small Cudweed**
1961	Cas	Ruderal	0	*Filago pyramidata*	Broad-leaved Cudweed
1987+	Native	Grassland	9	***Filago vulgaris***	**Common Cudweed**
1987+	Native	Wetland	386	*Filipendula ulmaria*	Meadowsweet
1893	Error ?	Grassland	0	*Filipendula vulgaris*	Dropwort
1987+	Cas	Ruderal	3	*Foeniculum vulgare*	Fennel
1987+	Cas	Ruderal	1	*Forsythia x intermedia [parentage not known]*	Forsythia
1955+	Neo	Ruderal	6	*Fragaria ananassa*	Garden Strawberry
1987+	Native	Woodland	143	*Fragaria vesca*	Wild Strawberry
1987+	Native	Woodland	293	*Fraxinus excelsior*	Ash
1956	Cas	Woodland	0	*Fraxinus ornus*	Manna Ash
1987+	Cas	Ruderal	2	*Fritillaria meleagris*	Fritillary
1960+	Neo	Woodland	7	*Fuchsia magellanica*	Fuchsia
1987+	Arc	Arable	9	***Fumaria bastardii***	**Tall Ramping-fumitory**
1987+	Arc	Arable	2	***Fumaria capreolata subsp. babingtonii***	**White Ramping-fumitory**
1987+	Arc	Arable	13	***Fumaria densiflora***	**Dense-flowered Fumitory**

1987+	Arc	Arable	188	*Fumaria muralis subsp. boraei*	Common Ramping-fumitory
1987+	Arc	Arable	154	*Fumaria officinalis*	Common Fumitory
1987+	Arc	Arable	40	*Fumaria officinalis subsp. officinalis*	Common Fumitory
1987+	Arc	Arable	26	***Fumaria officinalis subsp. wirtgenii***	**Common Fumitory**
1987+	Arc	Arable	16	***Fumaria purpurea***	**Purple Ramping-fumitory**
1987+	Cas	Ruderal	1	*Galanthus elwesii x plicatus*	A hybrid Snowdrop
1853+	Neo	Woodland	113	*Galanthus nivalis*	Snowdrop
2006+	Neo	Woodland	16	*Galanthus nivalis x plicatus*	A hybrid Snowdrop
2004+	Neo	Woodland	2	*Galanthus plicatus*	Pleated Snowdrop
1987+	Cas	Ruderal	1	*Galega officinalis*	Goat's-rue
1866	Arc	Rock	0	*Galeopsis angustifolia*	Red Hemp-nettle
1987+	Native	Arable	66	*Galeopsis bifida*	Bifid Hemp-nettle
1987+	Arc	Arable	59	***Galeopsis speciosa***	**Large-flowered Hemp-nettle**
1987+	Native	Arable	84	*Galeopsis tetrahit*	Common Hemp-nettle
1987+	Native	Arable	191	*Galeopsis tetrahit agg.*	Common Hemp-nettle
1960	Cas	Ruderal	0	*Galinsoga parviflora*	Gallant-soldier
1986	Cas	Ruderal	0	*Galinsoga quadriradiata*	Shaggy Gallant-soldier
1987+	Native	Woodland	345	*Galium aparine*	Cleavers
1987+	Native	Rock	5	***Galium boreale***	**Northern Bedstraw**
1987+	Native	Grassland	14	***Galium mollugo (G. album)***	**Hedge Bedstraw**
1987+	Native	Grassland	1	***Galium mollugo subsp. erectum (G. album subsp. erectum)***	**Upright Hedge Bedstraw**
1987+	Native	Woodland	55	***Galium odoratum***	**Woodruff**
1987+	Native	Wetland	187	*Galium palustre*	Common Marsh-bedstraw
1987+	Native	Wetland	15	***Galium palustre subsp. elongatum***	**Great Marsh-bedstraw**
1987+	Native	Wetland	118	*Galium palustre subsp. palustre*	Common Marsh-bedstraw
1987+	Native	Moorland	230	*Galium saxatile*	Heath Bedstraw
1987+	Native	Rock	1	***Galium sterneri***	**Limestone Bedstraw**
1987+	Native	Wetland	128	***Galium uliginosum***	**Fen Bedstraw**
1987+	Native	Grassland	237	*Galium verum*	Lady's Bedstraw
1995+	Neo	Woodland	1	*Gaultheria shallon*	Shallon
1987+	Native	Moorland	17	***Genista anglica***	**Petty Whin**
1961	Native	Grassland	0	*Genista tinctoria subsp. tinctoria*	Dyer's Greenweed
1836	Error ?	Grassland	0	*Gentianella amarella*	Autumn Gentian
1968	Native	Grassland	0	*Gentianella campestris*	Field Gentian
1987+	Native	Grassland	1	***Geranium columbinum***	**Long-stalked Crane's-bill**
1987+	Arc	Grassland	143	*Geranium dissectum*	Cut-leaved Crane's-bill
1987+	Cas	Ruderal	2	*Geranium endressii*	French Crane's-bill
1829+	Neo	Rock	15	*Geranium lucidum*	Shining Crane's-bill
2011+	Neo	Ruderal	2	*Geranium macrorrhizum*	Rock Crane's-bill
1987+	Native	Grassland	139	*Geranium molle*	Dove's-foot Crane's-bill
1987+	Cas	Grassland	1	*Geranium phaeum*	Dusky Crane's-bill
1987+	Native	Grassland	121	*Geranium pratense*	Meadow Crane's-bill

1987+	Native	Grassland	22	***Geranium pusillum***	**Small-flowered Crane's-bill**
1994+	Neo	Grassland	5	*Geranium pyrenaicum*	Hedgerow Crane's-bill
1987+	Native	Woodland	256	*Geranium robertianum*	Herb-Robert
1987+	Native	Coast	2	***Geranium sanguineum***	**Bloody Crane's-bill**
1987+	Native	Woodland	99	***Geranium sylvaticum***	**Wood Crane's-bill**
1987+	Native	Woodland	1	***Geranium sylvaticum var. wannerii [flowers pale with darker veins]***	**Wood Crane's-bill**
1931	Neo	Grassland	0	*Geranium versicolor*	Pencilled Crane's-bill
1987+	Cas	Ruderal	1	*Geranium x magnificum = G. ibericum x platypetalum*	Purple Crane's-bill
2010+	Neo	Ruderal	8	*Geranium x oxonianum = G. endressii x versicolor*	Druce's Crane's-bill
1987+	Native	Wetland	213	***Geum rivale***	**Water Avens**
1987+	Native	Woodland	249	*Geum urbanum*	Wood Avens
1987+	Native	Woodland	31	***Geum x intermedium = G. rivale x urbanum***	**Hybrid Avens**
1987+	Native	Coast	3	***Glaucium flavum***	**Yellow Horned-poppy**
1987+	Native	Coast	6	***Glaux maritima***	**Sea-milkwort**
				Glebionis	[See *Chrysanthemum*]
1987+	Native	Woodland	133	*Glechoma hederacea*	Ground-ivy
1987+	Native	Aquatic	46	*Glyceria declinata*	Small Sweet-grass
1987+	Native	Aquatic	173	*Glyceria fluitans*	Floating Sweet-grass
1938+	Neo	Riverside	10	***Glyceria maxima***	**Reed Sweet-grass**
1987+	Native	Aquatic	64	*Glyceria notata*	Plicate Sweet-grass
1987+	Native	Aquatic	8	*Glyceria x pedicellata = G. fluitans x notata*	Hybrid Sweet-grass
1989	Native	Woodland	1	*Gnaphalium sylvaticum*	Heath Cudweed
1987+	Native	Arable	81	*Gnaphalium uliginosum*	Marsh Cudweed
1993	Native	Woodland	1	*Goodyera repens*	Creeping Lady's-tresses
2004+	Neo	Wetland	1	*Gunnera manicata*	Brazilian Giant-rhubarb
2011+	Neo	Wetland	1	*Gunnera tinctoria*	Giant-rhubarb
1987+	Native	Grassland	13	***Gymnadenia conopsea (G. conopsea agg.)***	**Fragrant Orchid**
1987+	Native	Grassland	3	***Gymnadenia conopsea subsp. borealis (G. borealis)***	**Fragrant Orchid**
1960	Native	Grassland	0	*Gymnadenia conopsea subsp. densiflora (G. densiflora)*	Fragrant Orchid
1987+	Native	Rock	20	***Gymnocarpium dryopteris***	**Oak Fern**
2010+	Neo	Ruderal	1	*Hebe x franciscana = H. elliptica x speciosa (Veronica x franciscana = V. elliptica x speciosa)*	Hedge Veronica
1987+	Cas	Woodland	1	*Hebe x lewisii = H. elliptica x salicifolia (Veronica x lewisii = V. elliptica x salicifolia)*	A hybrid Hebe
1983+	Neo	Woodland	1	*Hedera colchica*	Persian Ivy
1987+	Native	Woodland	151	*Hedera helix*	Ivy
1987+	Native	Woodland	9	*Hedera helix subsp. helix*	Common Ivy

1990+	Neo	Woodland	24	*Hedera helix subsp. hibernica 'Hibernica' (H. hibernica 'Hibernica')*	Irish Ivy
1987+	Native	Grassland	87	***Helianthemum nummularium***	**Common Rockrose**
1987+	Cas	Arable	10	***Helianthus annuus***	**Sunflower**
1987+	Cas	Arable	1	*Helianthus tuberosus*	Jerusalem Artichoke
1987+	Native	Grassland	62	***Helictotrichon pratense (Avenula pratensis)***	**Meadow Oat-grass**
1987+	Native	Grassland	27	***Helictotrichon pubescens (Avenula pubescens)***	**Downy Oat-grass**
1872+	Neo	Woodland	2	*Helleborus foetidus*	Stinking Hellebore
1987+	Cas	Ruderal	1	*Helleborus niger*	Christmas-rose
1987+	Cas	Ruderal	1	*Helleborus orientalis*	Lenten-rose
1960	Cas	Woodland	0	*Helleborus viridis subsp. occidentalis*	Green Hellebore
1947+	Neo	Riverside	61	***Heracleum mantegazzianum***	**Giant Hogweed**
1987+	Native	Riverside	4	*Heracleum mantegazzianum x sphondylium*	Hybrid Hogweed
1987+	Native	Grassland	333	*Heracleum sphondylium*	Hogweed
1831+	Neo	Riverside	38	***Hesperis matronalis***	**Dame's-violet**
1987+	Native	Rock	128	*Hieracium agg. [all H. spp.]*	Hawkweed
1987+	Native	Rock	1	*Hieracium ampliatum*	Hawkweed
1987+	Native	Rock	2	*Hieracium argenteum*	Hawkweed
1987+	Data deficient	Rock	1	*Hieracium auratiflorum*	Hawkweed
1987+	Native	Rock	1	*Hieracium boswellii*	Hawkweed
1987+	Native	Rock	2	*Hieracium britanniciforme*	Hawkweed
1979	Native	Rock	2	*Hieracium caesiomurorum*	Hawkweed
1987+	Native	Rock	1	*Hieracium cravoniense*	Hawkweed
1987+	Data deficient	Rock	1	*Hieracium dasythrix*	Hawkweed
1987+	Native	Rock	3	*Hieracium deganwyense*	Hawkweed
1987+	Native	Rock	8	*Hieracium dicella*	Hawkweed
1970+	Neo	Rock	2	***Hieracium grandidens***	**Hawkweed**
1987+	Native	Rock	2	*Hieracium leyi*	Hawkweed
1969	Native	Rock	0	*Hieracium oistophyllum*	Hawkweed
1987+	Native	Rock	2	*Hieracium orimeles*	Hawkweed
1870	Native	Rock	0	*Hieracium prenanthoides*	Hawkweed
1987+	Native	Rock	1	*Hieracium reticulatiforme*	Hawkweed
1987+	Data deficient	Rock	2	*Hieracium riddelsdellii*	Hawkweed
1987+	Native	Rock	2	*Hieracium rubicundiforme*	Hawkweed
1987+	Native	Rock	3	*Hieracium sabaudum*	Hawkweed
1987+	Native	Rock	2	*Hieracium schmidtii*	Hawkweed
1987+	Native	Rock	3	*Hieracium subcrocatum*	Hawkweed
1886	Native	Rock	0	*Hieracium umbellatum*	Hawkweed
1850	Neo	Rock	0	*Hieracium vagum*	Hawkweed
1984+	Neo	Rock	1	*Hieracium virgultorum (H. pseudorigens)*	Hawkweed

1987+	Native	Rock	20	*Hieracium vulgatum*	Common Hawkweed
1952+	Neo	Coast	12	***Hippophae rhamnoides***	**Sea-buckthorn**
1987+	Native	Wetland	6	***Hippuris vulgaris***	**Mare's-tail**
1987+	Native	Grassland	334	*Holcus lanatus*	Yorkshire-fog
1987+	Native	Woodland	242	*Holcus mollis*	Creeping Soft-grass
1987+	Native	Coast	11	***Honckenya peploides***	**Sea Sandwort**
1885	Native	Woodland	0	*Hordelymus europaeus*	Wood Barley
1987+	Cas	Arable	51	*Hordeum distichon*	Two-rowed Barley
1983+	Neo	Ruderal	4	*Hordeum jubatum*	Foxtail Barley
1987+	Arc	Ruderal	10	***Hordeum murinum***	**Wall Barley**
1987+	Cas	Arable	1	*Hordeum vulgare*	Six-rowed Barley
1987+	Cas	Woodland	4	*Humulus lupulus*	Hop
1987+	Native	Moorland	1	***Huperzia selago***	**Fir Clubmoss**
1984+	Neo	Grassland	7	*Hyacinthoides hispanica*	Spanish Bluebell
1987+	Cas	Ruderal	1	*Hyacinthoides italica*	Italian Bluebell
1987+	Native	Woodland	84	***Hyacinthoides non-scripta***	**Bluebell**
1982+	Neo	Grassland	78	***Hyacinthoides x massartiana = H. hispanica x non-scripta***	**Hybrid Bluebell**
1987+	Native	Wetland	31	***Hydrocotyle vulgaris***	**Marsh Pennywort**
1987+	Arc	Grassland	2	***Hyoscyamus niger***	**Henbane**
1831+	Neo	Woodland	19	*Hypericum androsaemum*	Tutsan
1960	Neo	Woodland	0	*Hypericum calycinum*	Rose-of-Sharon
1987+	Native	Woodland	68	***Hypericum hirsutum***	**Hairy St John's-wort**
1987+	Native	Ruderal	12	***Hypericum humifusum***	**Trailing St John's-wort**
1938+	Neo	Ruderal	1	*Hypericum maculatum*	Imperforate St John's-wort
1926+	Neo	Ruderal	4	*Hypericum maculatum subsp. obtusiusculum*	Imperforate St John's-wort
1987+	Arc	Riverside	60	***Hypericum perforatum***	**Perforate St John's-wort**
1987+	Native	Moorland	126	*Hypericum pulchrum*	Slender St John's-wort
1987+	Native	Wetland	70	*Hypericum tetrapterum*	Square-stalked St John's-wort
1987+	Arc	Riverside	28	***Hypericum x desetangsii = H. maculatum x perforatum***	**Hybrid St John's-wort**
1987+	Native	Grassland	203	*Hypochaeris radicata*	Cat's-ear
1931	Neo	Ruderal	0	*Iberis amara*	Wild Candytuft
1987+	Native	Woodland	118	*Ilex aquifolium*	Holly
1987+	Cas	Woodland	1	*Ilex x altaclerensis = I. aquifolium x perado*	Highclere Holly
1915+	Neo	Riverside	62	***Impatiens glandulifera***	**Indian Balsam**
1985+	Neo	Ruderal	1	*Inula helenium*	Elecampane
1966+	Neo	Grassland	6	*Iris foetidissima*	Stinking Iris
2009+	Neo	Ruderal	1	*Iris germanica*	Bearded Iris
1987+	Native	Wetland	140	***Iris pseudacorus***	**Yellow Iris**
1987+	Native	Wetland	41	***Isolepis setacea***	**Bristle Club-rush**
1987+	Cas	Woodland	6	*Juglans regia*	Walnut
1987+	Native	Wetland	150	*Juncus acutiflorus*	Sharp-flowered Rush

1987+	Native	Coast	6	***Juncus ambiguus (J. ranarius)***	**Frog Rush**
1987+	Native	Wetland	275	*Juncus articulatus*	Jointed Rush
1987+	Native	Wetland	132	*Juncus bufonius*	Toad Rush
1987+	Native	Wetland	186	*Juncus bufonius agg.*	Toad Rush
1987+	Native	Moorland	72	*Juncus bulbosus*	Bulbous Rush
1987+	Native	Wetland	185	*Juncus conglomeratus*	Compact Rush
1987+	Native	Wetland	383	*Juncus effusus*	Soft Rush
1987+	Native	Coast	9	***Juncus gerardii***	**Saltmarsh Rush**
1987+	Native	Wetland	105	*Juncus inflexus*	Hard Rush
1987+	Native	Moorland	119	*Juncus squarrosus*	Heath Rush
1987+	Native	Wetland	6	*Juncus x diffusus = J. effusus x inflexus*	A hybrid Rush
1987+	Native	Wetland	7	*Juncus x kern-reichgeltii = J. conglomeratus x effusus*	A hybrid Rush
1987+	Native	Wetland	19	*Juncus x surrejanus = J. acutiflorus x articulatus*	A hybrid Rush
1987+	Native	Woodland	45	***Juniperus communis subsp. communis***	**Juniper**
1987+	Cas	Riverside	1	*Kerria japonica*	Kerria
1987+	Native	Grassland	44	***Knautia arvensis***	**Field Scabious**
1997+	Neo	Ruderal	3	*Kniphofia uvaria*	Red-hot-poker
1987+	Native	Grassland	47	***Koeleria macrantha***	**Crested Hair-grass**
1987+	Cas	Woodland	1	*Laburnum alpinum*	Scottish Laburnum
1945+	Neo	Woodland	25	*Laburnum anagyroides*	Laburnum
1987+	Arc	Grassland	11	***Lactuca virosa***	**Great Lettuce**
1987+	Cas	Aquatic	3	*Lagarosiphon major*	Curly Waterweed
1878+	Neo	Ruderal	22	*Lamiastrum galeobdolon*	Yellow Archangel
1993+	Neo	Ruderal	22	*Lamiastrum galeobdolon subsp. argentatum*	Yellow Archangel
1987+	Arc	Ruderal	225	*Lamium album*	White Dead-nettle
1987+	Arc	Arable	75	***Lamium amplexicaule***	**Henbit Dead-nettle**
1987+	Arc	Arable	81	***Lamium confertum***	**Northern Dead-nettle**
1987+	Arc	Arable	40	***Lamium hybridum***	**Cut-leaved Dead-nettle**
1931+	Neo	Ruderal	1	*Lamium maculatum*	Spotted Dead-nettle
1987+	Arc	Arable	220	*Lamium purpureum*	Red Dead-nettle
1987+	Native	Arable	246	*Lapsana communis*	Nipplewort
1945+	Neo	Woodland	70	*Larix decidua*	European Larch
1979+	Neo	Woodland	21	*Larix kaempferi*	Japanese Larch
1979+	Neo	Woodland	100	*Larix x marschlinsii = L. decidua x kaempferi*	Hybrid Larch
1962+	Neo	Woodland	3	***Lathraea clandestina***	**Purple Toothwort**
1987+	Native	Woodland	13	***Lathraea squamaria***	**Toothwort**
1998+	Neo	Woodland	2	*Lathyrus latifolius*	Broad-leaved Everlasting-pea
1987+	Native	Moorland	133	*Lathyrus linifolius*	Bitter-vetch
1987+	Native	Moorland	2	*Lathyrus linifolius var. tenuifolius*	Bitter-vetch
1987+	Native	Grassland	328	*Lathyrus pratensis*	Meadow Vetchling

1987+	Native	Woodland	2	***Lathyrus sylvestris***	**Narrow-leaved Everlasting-pea**
1987+	Cas	Coast	3	*Lavatera arborea (Malva arborea)*	Tree-mallow
1900	Cas	Wetland	0	*Leersia oryzoides*	Cut-grass
1987+	Native	Aquatic	119	*Lemna minor*	Common Duckweed
2009+	Neo	Aquatic	7	***Lemna minuta***	**Least Duckweed**
1987+	Native	Aquatic	3	***Lemna trisulca***	**Ivy-leaved Duckweed**
1987+	Native	Grassland	191	*Leontodon autumnalis (Scorzoneroides autumnalis)*	Autumnal Hawkbit
1987+	Native	Grassland	84	***Leontodon hispidus***	**Rough Hawkbit**
1994+	Neo	Grassland	1	*Leontodon saxatilis*	Lesser Hawkbit
				Lepidium	[See also *Coronopus*]
1902	Arc	Ruderal	0	*Lepidium campestre*	Field Pepperwort
1892+	Neo	Ruderal	3	*Lepidium draba*	Hoary Cress
1987+	Native	Riverside	26	***Lepidium heterophyllum***	**Smith's Pepperwort**
1987+	Cas	Ruderal	1	*Lepidium sativum*	Garden Cress
1996+	Neo	Grassland	7	*Leucanthemella serotina*	Autumn Oxeye
1987+	Native	Grassland	116	*Leucanthemum vulgare*	Oxeye Daisy
1998+	Neo	Grassland	3	*Leucanthemum x superbum = L. lacustre x maximum*	Shasta Daisy
1987+	Cas	Woodland	2	*Leucojum aestivum*	Summer Snowflake
1977+	Neo	Wetland	5	*Leucojum vernum*	Spring Snowflake
1957	Cas	Ruderal	0	*Levisticum officinale*	Lovage
1987+	Cas	Rock	1	*Leycesteria formosa*	Himalayan Honeysuckle
1987+	Native	Coast	6	***Leymus arenarius***	**Lyme-grass**
1987+	Cas	Ruderal	1	*Libertia elegans*	Lesser Chilean-iris
1987+	Native	Coast	16	***Ligusticum scoticum***	**Scots Lovage**
1987+	Cas	Woodland	4	*Ligustrum ovalifolium*	Garden Privet
1834+	Neo	Woodland	77	*Ligustrum vulgare*	Wild Privet
1872+	Neo	Woodland	7	*Lilium martagon*	Martagon Lily
1965+	Neo	Grassland	4	*Lilium pyrenaicum*	Pyrenean Lily
1919	Cas	Ruderal	0	*Linaria dalmatica*	Balkan Toadflax
1960+	Neo	Ruderal	38	*Linaria purpurea*	Purple Toadflax
1960	Neo	Ruderal	0	*Linaria repens*	Pale Toadflax
1987+	Native	Ruderal	15	*Linaria vulgaris*	Common Toadflax
1987+	Native	Woodland	1	***Linnaea borealis***	**Twinflower**
1987+	Native	Grassland	106	***Linum catharticum***	**Fairy Flax**
1987+	Cas	Arable	16	***Linum usitatissimum***	**Flax**
1987+	Cas	Woodland	4	*Liriodendron tulipifera*	Tulip-tree
1987+	Native	Moorland	8	***Listera cordata (Neottia cordata)***	**Lesser Twayblade**
1987+	Native	Woodland	22	***Listera ovata (Neottia ovata)***	**Common Twayblade**
1956	Cas	Arable	0	*Lithospermum arvense*	Field Gromwell
1951	Cas	Ruderal	0	*Lithospermum officinale*	Common Gromwell
1987+	Native	Aquatic	4	***Littorella uniflora***	**Shoreweed**
1987+	Cas	Ruderal	1	*Lobelia erinus*	Garden Lobelia
1987+	Cas	Ruderal	1	*Lobularia maritima*	Sweet Alison
1847+	Neo	Grassland	24	*Lolium multiflorum*	Italian Rye-grass

1987+	Native	Grassland	233	*Lolium perenne*	Perennial Rye-grass
1878	Cas	Woodland	0	*Lonicera caprifolium*	Perfoliate Honeysuckle
1987+	Cas	Ruderal	1	*Lonicera involucrata*	Californian Honeysuckle
1999+	Neo	Woodland	6	*Lonicera nitida*	Wilson's Honeysuckle
1987+	Native	Woodland	143	*Lonicera periclymenum*	Honeysuckle
1987+	Cas	Woodland	1	*Lonicera pileata*	Box-leaved Honeysuckle
1987+	Cas	Woodland	4	*Lonicera xylosteum*	Fly Honeysuckle
1987+	Native	Grassland	279	*Lotus corniculatus*	Common Bird's-foot-trefoil
1997+	Neo	Grassland	9	*Lotus corniculatus var. sativus*	Common Bird's-foot-trefoil
1867	Native	Grassland	0	*Lotus glaber (Lotus tenuis)*	Narrow-leaved Bird's-foot-trefoil
1987+	Native	Wetland	162	*Lotus pedunculatus*	Large Bird's-foot-trefoil
1989+	Neo	Ruderal	29	*Lunaria annua*	Honesty
1987+	Cas	Arable	2	***Lupinus albus***	**White Lupin**
1957	Cas	Coast	0	*Lupinus arboreus*	Tree Lupin
1993+	Neo	Grassland	8	*Lupinus x regalis = L. arboreus x polyphyllus*	Russell Lupin
1987+	Native	Grassland	207	*Luzula campestris*	Field Wood-rush
1902+	Neo	Woodland	4	***Luzula luzuloides***	**White Wood-rush**
1987+	Native	Moorland	165	*Luzula multiflora*	Heath Wood-rush
1987+	Native	Moorland	7	*Luzula multiflora subsp. congesta*	Heath Wood-rush
1987+	Native	Woodland	139	***Luzula pilosa***	**Hairy Wood-rush**
1987+	Native	Woodland	166	*Luzula sylvatica*	Great Wood-rush
1987+	Cas	Ruderal	1	*Lychnis chalcedonica (Silene chalcedonica)*	Maltese-Cross
1987+	Cas	Riverside	1	*Lychnis coronaria (Silene coronaria)*	Rose Campion
1987+	Native	Wetland	144	***Lychnis flos-cuculi (Silene flos-cuculi)***	**Ragged-Robin**
1987+	Cas	Riverside	5	*Lycopersicon esculentum (Solanum lycopersicum)*	Tomato
1987+	Native	Moorland	55	***Lycopodium clavatum***	**Stag's-horn Clubmoss**
1987+	Native	Wetland	1	*Lycopus europaeus*	Gypsywort
1998+	Neo	Wetland	4	*Lysichiton americanus*	American Skunk-cabbage
1987+	Native	Woodland	85	***Lysimachia nemorum***	**Yellow Pimpernel**
1834+	Neo	Wetland	6	*Lysimachia nummularia*	Creeping-Jenny
1951+	Neo	Grassland	14	*Lysimachia punctata*	Dotted Loosestrife
1829+	Neo	Riverside	33	***Lysimachia vulgaris***	**Yellow Loosestrife**
1987+	Native	Aquatic	7	***Lythrum portula***	**Water-purslane**
1979/1987+	ENative/Neo	Wetland	4	***Lythrum salicaria***	**Purple-loosestrife**
1957+	Neo	Woodland	15	*Mahonia aquifolium*	Oregon-grape
1987+	Arc	Woodland	18	***Malus domestica (M. pumila)***	**Apple**
1987+	Cas	Woodland	1	*Malus sargentii*	Sargent's Apple
1942+	Arc	Woodland	9	***Malus sylvestris***	**Crab Apple**
1942+	Arc	Woodland	102	***Malus sylvestris agg.***	**An Apple**

1987+	Cas	Woodland	1	*Malus x purpurea = M. atrosanguinea x niedzwetzkyana*	Purple Crab
				Malva	[See also *Lavatera*]
1987+	Native/Arc	Grassland	34	***Malva moschata***	**Musk Mallow**
1987+	Arc	Grassland	13	***Malva neglecta***	**Dwarf Mallow**
1987+	Arc	Grassland	27	*Malva sylvestris*	Common Mallow
1881	Cas	Grassland	0	*Marrubium vulgare*	White Horehound
1939+	Neo	Arable	272	*Matricaria discoidea*	Pineappleweed
1987+	Arc	Arable	32	***Matricaria recutita (M. chamomilla)***	**Scented Mayweed**
2002+	Neo	Wetland	1	*Matteuccia struthiopteris*	Ostrich Fern
1936+	Neo	Woodland	49	***Meconopsis cambrica***	**Welsh Poppy**
1956+	Neo	Grassland	3	*Medicago arabica*	Spotted Medick
1987+	Native	Grassland	94	*Medicago lupulina*	Black Medick
1946	Cas	Ruderal	0	*Medicago minima*	Bur Medick
1956	Cas	Ruderal	0	*Medicago polymorpha*	Toothed Medick
1829+	Neo	Arable	3	*Medicago sativa subsp. sativa*	Lucerne
1987+	Cas	Ruderal	1	*Medicago sativa subsp. varia (M. s. nothosubsp. varia = M. s. subsp. falcata x subsp. sativa)*	Sand Lucerne
1987+	Native	Woodland	3	***Melampyrum pratense***	**Common Cow-wheat**
1983	Native	Woodland	0	*Melica nutans*	Mountain Melick
1987+	Native	Woodland	17	***Melica uniflora***	**Wood Melick**
1987+	Cas	Ruderal	4	***Melilotus albus***	**White Melilot**
1902	Cas	Ruderal	0	*Melilotus altissimus*	Tall Melilot
1960	Cas	Ruderal	0	*Melilotus indicus*	Small Melilot
1987+	Cas	Ruderal	6	***Melilotus officinalis***	**Ribbed Melilot**
1987+	Native	Wetland	217	*Mentha aquatica*	Water Mint
1987+	Native	Arable	7	***Mentha arvensis***	**Corn Mint**
1853	Error ?	Ruderal	0	*Mentha pulegium*	Pennyroyal
1987+	Arc	Riverside	33	*Mentha spicata*	Spear Mint
1995+	Neo	Riverside	2	*Mentha suaveolens*	Round-leaved Mint
1834+	Neo	Riverside	5	*Mentha x gracilis = M. arvensis x spicata*	Bushy Mint
1829+	Neo	Riverside	54	*Mentha x piperita = M. aquatica x spicata*	Peppermint
1995+	Neo	Riverside	1	*Mentha x piperita var. citrata = M. aquatica x spicata*	Eau-de-Cologne Mint
1987+	Native	Riverside	14	*Mentha x verticillata = M. arvensis x aquatica*	Whorled Mint
1833+	Neo	Riverside	16	***Mentha x villosa = M. spicata x suaveolens***	**Apple Mint**
2009+	Neo	Riverside	4	*Mentha x villosa var. alopecuroides = M. spicata x suaveolens*	Apple Mint
1954+	Neo	Riverside	3	*Mentha x villosonervata = M. longifolia x spicata*	Sharp-toothed Mint
1987+	Native	Wetland	33	***Menyanthes trifoliata***	**Bogbean**

1987+	Native	Woodland	146	***Mercurialis perennis***	**Dog's Mercury**
1913	Native	Coast	0	*Mertensia maritima*	Oysterplant
1987+	Cas	Woodland	1	*Metasequoia glyptostroboides*	Dawn Redwood
1987+	Native	Woodland	5	***Milium effusum***	**Wood Millet**
1981+	Neo	Riverside	60	*Mimulus agg.*	Monkeyflower
1844+	Neo	Riverside	67	***Mimulus guttatus***	**Monkeyflower**
1998+	Neo	Riverside	3	*Mimulus luteus*	Blood-drop-emlets
1955+	Neo	Ruderal	4	*Mimulus moschatus*	Musk
1956+	Neo	Riverside	6	*Mimulus x burnetii = M. cupreus x guttatus*	Coppery Monkeyflower
1995+	Neo	Riverside	1	*Mimulus x maculosus = M. cupreus x luteus*	Scottish Monkeyflower
1946+	Neo	Riverside	22	***Mimulus x robertsii = M. guttatus x luteus***	**Hybrid Monkeyflower**
1987+	Native	Grassland	3	***Minuartia verna***	**Spring Sandwort**
1987+	Native	Woodland	88	*Moehringia trinervia*	Three-nerved Sandwort
1987+	Native	Moorland	116	*Molinia caerulea*	Purple Moor-grass
1987+	Data deficient	Wetland	1	*Molinia caerulea subsp. arundinacea*	Purple Moor-grass
1987+	Native	Aquatic	138	*Montia fontana*	Blinks
1987+	Native	Grassland	21	***Montia fontana subsp. chondrosperma***	**Blinks**
1987+	Native	Aquatic	17	*Montia fontana subsp. fontana*	Blinks
1987+	Native	Grassland	4	***Montia fontana subsp. variabilis***	**Blinks**
1995+	Neo	Ruderal	13	*Muscari armeniacum*	Garden Grape-hyacinth
2003+	Neo	Ruderal	1	*Muscari neglectum*	Grape-hyacinth
1987+	Arc	Rock	19	***Mycelis muralis***	**Wall Lettuce**
1987+	Arc	Arable	314	*Myosotis arvensis*	Field Forget-me-not
1987+	Arc	Woodland	1	*Myosotis arvensis var. sylvestris*	Field Forget-me-not
1987+	Native	Grassland	143	*Myosotis discolor*	Changing Forget-me-not
1987+	Native	Riverside	154	*Myosotis laxa*	Tufted Forget-me-not
1987+	Native	Grassland	20	***Myosotis ramosissima***	**Early Forget-me-not**
1987+	Native	Riverside	148	*Myosotis scorpioides*	Water Forget-me-not
1987+	Native	Moorland	101	*Myosotis secunda*	Creeping Forget-me-not
1987+	Native	Woodland	93	*Myosotis sylvatica*	Wood Forget-me-not
1987+	Native	Riverside	1	*Myosotis x suzae = M. laxa x scorpioides*	A hybrid Forget-me-not
1950+	Neo	Riverside	5	***Myosoton aquaticum***	**Water Chickweed**
1955	Cas	Wetland	0	*Myrica gale*	Bog-myrtle
1987+	Native	Aquatic	21	***Myriophyllum alterniflorum***	**Alternate-flowered Water-milfoil**
1987+	Native	Aquatic	51	*Myriophyllum spicatum*	Spiked Water-milfoil
1987+	Arc	Riverside	50	***Myrrhis odorata***	**Sweet Cicely**
1834+	Neo	Grassland	100	***Narcissus agg. [N. spp. and hybrids]***	**Garden Daffodil**
2002+	Neo	Grassland	10	*Narcissus poeticus*	Pheasant's-eye Daffodil
2006+	Neo	Grassland	5	*Narcissus pseudonarcissus*	Wild Daffodil

1998+	Neo	Grassland	6	*Narcissus pseudonarcissus subsp. pseudonarcissus (N. pseudonarcissus)*	Wild Daffodil
2004+	Neo	Grassland	1	*Narcissus x incomparabilis = N. poeticus x pseudonarcissus*	Nonesuch Daffodil
1886+	Neo	Grassland	1	*Narcissus x medioluteus = N. poeticus x tazetta*	Primrose-peerless Daffodil
1987+	Native	Moorland	132	*Nardus stricta*	Mat-grass
1987+	Native	Moorland	28	***Narthecium ossifragum***	**Bog Asphodel**
				Nasturtium	[See *Rorippa*]
				Neottia	[See also *Listera*]
1985	Native	Woodland	0	*Neottia nidus-avis*	Bird's-nest Orchid
1893	Cas	Ruderal	0	*Nepeta cataria*	Catmint
1987+	Cas	Ruderal	1	*Nepeta x faassenii = N. nepetella x racemosa*	Garden Catmint
1987+	Cas	Woodland	4	*Nothofagus alpina*	Rauli
1987+	Cas	Woodland	2	*Nothofagus obliqua*	Roble
1964+	Neo	Aquatic	2	*Nuphar advena*	Spatter-dock
1987+	Native	Aquatic	6	***Nuphar lutea***	**Yellow Water-lily**
1964	Neo	Aquatic	0	*Nymphaea alba subsp. alba*	White Water-lily
1881	Neo	Aquatic	0	*Nymphoides peltata*	Fringed Water-lily
1987+	Native	Arable	65	*Odontites vernus*	Red Bartsia
1868	Data deficient	Arable	0	*Odontites vernus subsp. serotinus*	Red Bartsia
1987+	Native	Wetland	2	*Odontites vernus subsp. vernus*	Red Bartsia
1838	Native	Wetland	0	*Oenanthe aquatica*	Fine-leaved Water-dropwort
1987+	Native	Wetland	69	*Oenanthe crocata*	Hemlock Water-dropwort
1987+	Cas	Ruderal	3	*Oenothera biennis*	Common Evening-primrose
1987+	Cas	Ruderal	6	*Oenothera glazioviana*	Large-flowered Evening-primrose
1987+	Cas	Arable	3	*Onobrychis viciifolia*	Sainfoin
1987+	Native	Grassland	59	***Ononis repens***	**Common Restharrow**
1987+	Cas	Ruderal	2	*Onopordum acanthium*	Cotton Thistle
1987+	Native	Grassland	4	***Ophioglossum vulgatum***	**Adder's-tongue Fern**
1987+	Native	Coast	33	***Orchis mascula***	**Early-purple Orchid**
1942	Native	Grassland	0	*Orchis morio (Anacamptis morio)*	Green-winged Orchid
1987+	Native	Moorland	65	***Oreopteris limbosperma***	**Lemon-scented Fern**
1987+	Native	Grassland	44	***Origanum vulgare***	**Wild Marjoram**
1871+	Neo	Grassland	24	*Ornithogalum angustifolium (O. umbellatum subsp. campestre)*	Star-of-Bethlehem
1931	Cas	Grassland	0	*Ornithopus perpusillus*	Bird's-foot
1987+	Native	Coast	1	***Orobanche alba***	**Thyme Broomrape**
1902	Native	Wetland	0	*Osmunda regalis*	Royal Fern
1987+	Cas	Woodland	1	*Ostraya carpinifolia*	Hop-hornbeam
1987+	Native	Woodland	201	*Oxalis acetosella*	Wood-sorrel

1942+	Neo	Ruderal	10	*Oxalis corniculata*	Procumbent Yellow-sorrel
2009+	Neo	Ruderal	3	*Oxalis debilis*	Large-flowered Pink-sorrel
1987+	Cas	Ruderal	1	*Oxalis dillenii*	Sussex Yellow-sorrel
1987+	Neo	Ruderal	22	*Oxalis exilis*	Least Yellow-sorrel
1998+	Neo	Ruderal	1	*Oxalis latifolia*	Garden Pink-sorrel
2007+	Neo	Ruderal	1	*Oxalis stricta*	Upright Yellow-sorrel
1979	Cas	Ruderal	0	*Paeonia officinalis*	Garden Peony
1987+	Cas	Arable	1	***Panicum miliaceum***	**Common Millet**
1965	Arc	Arable	0	*Papaver argemone*	Prickly Poppy
1987+	Arc	Arable	95	*Papaver dubium subsp. dubium (P. dubium)*	Long-headed Poppy
1987+	Arc	Arable	7	***Papaver dubium subsp. lecoqii (P. lecoqii)***	**Yellow-juiced Poppy**
1997+	Neo	Ruderal	6	*Papaver pseudoorientale*	Oriental Poppy
1987+	Arc	Arable	51	*Papaver rhoeas*	Common Poppy
1987+	Arc	Ruderal	29	*Papaver somniferum*	Opium Poppy
1984	Cas	Coast	0	*Parapholis strigosa*	Hard-grass
1829+	Neo	Rock	5	*Parietaria judaica*	Pellitory-of-the-Wall
1987+	Native	Wetland	34	***Parnassia palustris***	**Grass-of-Parnassus**
1980	Neo	Grassland	0	*Pastinaca sativa*	Wild Parsnip
1987+	Native	Wetland	29	***Pedicularis palustris***	**Marsh Lousewort**
1987+	Native	Moorland	42	*Pedicularis sylvatica*	Lousewort
1764+	Neo	Grassland	61	*Pentaglottis sempervirens*	Green Alkanet
1987+	Native	Aquatic	132	*Persicaria amphibia*	Amphibious Bistort
1893+	Neo	Grassland	11	*Persicaria bistorta*	Common Bistort
1977	Neo	Riverside	0	*Persicaria campanulata*	Lesser Knotweed
1987+	Native	Riverside	22	*Persicaria hydropiper*	Water-pepper
1987+	Native	Arable	29	***Persicaria lapathifolia***	**Pale Persicaria**
1987+	Native	Arable	195	*Persicaria maculosa*	Redshank
1987+	Cas	Arable	6	***Persicaria pensylvanica***	**Pinkweed**
1946+	Neo	Riverside	16	*Petasites albus*	White Butterbur
1871+	Neo	Ruderal	11	*Petasites fragrans*	Winter Heliotrope
1987+	Arc	Riverside	101	***Petasites hybridus***	**Butterbur**
1987+	Arc	Riverside	1	***Petasites hybridus 'female'***	**Butterbur (female form)**
1831+	Neo	Grassland	4	*Petroselinum crispum*	Garden Parsley
1957	Cas	Ruderal	0	*Peucedanum ostruthium (Imperatoria ostruthium)*	Masterwort
1987+	Cas	Arable	12	***Phacelia tanacetifolia***	**Phacelia**
1987+	Native	Riverside	224	***Phalaris arundinacea***	**Reed Canary-grass**
1987+	Cas	Ruderal	2	*Phalaris canariensis*	Canary-grass
1987+	Native	Woodland	3	***Phegopteris connectilis***	**Beech Fern**
1987+	Cas	Woodland	1	*Philadelphus x virginalis = P. coronarius x microphyllus x pubescens (P. 'Virginalis Group' including P. x virginalis)*	Hairy Mock-orange
1987+	Native	Grassland	63	*Phleum bertolonii*	Smaller Cat's-tail

1987+	Native	Grassland	133	*Phleum pratense*	Timothy
1987+	Native	Grassland	184	*Phleum pratense agg.*	Timothy
1987+	Cas	Woodland	1	*Photinia davidiana (Stranvaesia davidiana)*	Stranvaesia
1987+	Native	Wetland	41	*Phragmites australis*	Common Reed
1947	Cas	Ruderal	0	*Phuopsis stylosa*	Caucasian Crosswort
1987+	Native	Woodland	81	***Phyllitis scolopendrium (Asplenium scolopendrium)***	**Hart's-tongue Fern**
2003+	Neo	Riverside	1	*Phytolacca acinosa*	Indian Pokeweed
1853+	Neo	Woodland	108	*Picea abies*	Norway Spruce
1987+	Cas	Woodland	1	*Picea omorika*	Serbian Spruce
1987+	Cas	Woodland	1	*Picea pungens 'Glauca'*	Colorado Spruce
1962+	Neo	Woodland	171	*Picea sitchensis*	Sitka Spruce
1987+	Cas	Ruderal	4	*Picris echioides (Helminthotheca echioides)*	Bristly Oxtongue
1834+	Neo	Ruderal	23	*Pilosella aurantiaca*	Fox-and-cubs
1861+	Neo	Ruderal	1	*Pilosella aurantiaca subsp. aurantiaca*	Fox-and-cubs
1935+	Neo	Ruderal	11	*Pilosella aurantiaca subsp. carpathicola*	Fox-and-cubs
1969+	Neo	Ruderal	1	*Pilosella flagellaris subsp. flagellaris*	Spreading Mouse-ear-hawkweed
1987+	Native	Grassland	180	*Pilosella officinarum*	Mouse-ear-hawkweed
1987+	Native	Grassland	110	*Pimpinella saxifraga*	Burnet-saxifrage
1987+	Native	Wetland	50	***Pinguicula vulgaris***	**Common Butterwort**
1999+	Neo	Woodland	19	*Pinus contorta*	Lodgepole Pine
1987+	Cas	Woodland	6	*Pinus mugo*	Dwarf Mountain-pine
1987+	Cas	Woodland	18	*Pinus nigra*	Austrian Pine
1987+	Cas	Woodland	3	*Pinus nigra subsp. laricio*	Corsican Pine
1987+	Cas	Woodland	7	*Pinus nigra subsp. nigra*	Austrian Pine
1987+	Cas	Woodland	1	*Pinus pinaster*	Maritime Pine
1962	Cas	Woodland	0	*Pinus radiata*	Monterey Pine
1939+	Neo	Woodland	234	*Pinus sylvestris*	Scots Pine
1987+	Cas	Arable	6	*Pisum sativum*	Garden Pea
1987+	Native	Coast	24	*Plantago coronopus*	Buck's-horn Plantain
1987+	Native	Grassland	377	*Plantago lanceolata*	Ribwort Plantain
1987+	Native	Ruderal	306	*Plantago major*	Greater Plantain
1987+	Native	Ruderal	1	*Plantago major subsp. major*	Greater Plantain
1987+	Native	Coast	34	*Plantago maritima*	Sea Plantain
1987+	Native	Grassland	3	***Plantago media***	**Hoary Plantain**
1987+	Native	Woodland	2	***Platanthera bifolia***	**Lesser Butterfly-orchid**
1873	Native	Grassland	0	*Platanthera chlorantha*	Greater Butterfly-orchid
1987+	Cas	Woodland	2	*Platanus orientalis*	Oriental Plane
1993+	Neo	Grassland	1	*Poa angustifolia*	Narrow-leaved Meadow-grass
1987+	Native	Arable	359	*Poa annua*	Annual Meadow-grass
1873+	Neo	Woodland	12	***Poa chaixii***	**Broad-leaved Meadow-grass**

1952	Neo	Rock	0	*Poa compressa*	Flattened Meadow-grass
1987+	Native	Grassland	166	*Poa humilis*	Spreading Meadow-grass
2002+	Neo	Ruderal	1	***Poa imbecilla subsp. breviglumis***	**New Zealand Meadow-grass**
1987+	Native	Woodland	85	***Poa nemoralis***	**Wood Meadow-grass**
2007+	Neo	Riverside	8	***Poa palustris***	**Swamp Meadow-grass**
1987+	Native	Grassland	105	*Poa pratensis*	Smooth Meadow-grass
1987+	Native	Grassland	250	*Poa pratensis agg.*	Smooth Meadow-grass
1987+	Native	Grassland	290	*Poa trivialis*	Rough Meadow-grass
1856+	Neo	Ruderal	3	*Polemonium caeruleum*	Jacob's-ladder
1987+	Native	Moorland	96	*Polygala serpyllifolia*	Heath Milkwort
1987+	Native	Grassland	18	***Polygala vulgaris***	**Common Milkwort**
1871+	Neo	Woodland	2	*Polygonatum multiflorum*	Solomon's-seal
1960+	Neo	Woodland	13	*Polygonatum x hybridum = P. multiflorum x odoratum*	Garden Solomon's-seal
1987+	Arc	Arable	93	*Polygonum arenastrum*	Equal-leaved Knotgrass
1987+	Native	Arable	177	*Polygonum aviculare*	Knotgrass
1987+	Native	Arable	248	*Polygonum aviculare agg.*	Knotgrass
1992+	Neo	Arable	3	*Polygonum rurivagum*	Cornfield Knotgrass
1987+	Native	Woodland	5	***Polypodium interjectum***	**Intermediate Polypody**
1987+	Native	Rock	55	*Polypodium vulgare*	Polypody
1987+	Native	Rock	136	*Polypodium vulgare agg.*	Polypody
1987+	Native	Rock	2	*Polypodium x mantoniae = P. interjectum x vulgare*	A hybrid Polypody
1987+	Cas	Ruderal	1	*Polypogon monspeliensis*	Annual Beard-grass
1987+	Native	Woodland	88	***Polystichum aculeatum***	**Hard Shield-fern**
1987+	Native	Woodland	12	***Polystichum setiferum***	**Soft Shield-fern**
1987+	Native	Woodland	10	***Polystichum x bicknellii = P. aculeatum x setiferum***	**A hybrid Shield-fern**
1999+	Neo	Woodland	29	*Populus alba*	White Poplar
1987+	Cas	Woodland	2	*Populus balsamifera x trichocarpa 'Balsam Spire'*	Hybrid Balsam-poplar
1987+	Cas	Ruderal	1	*Populus nigra 'Italica'*	Lombardy Poplar
1985	Cas	Woodland	0	*Populus nigra subsp. betulifolia*	Black Poplar
1987+	Native	Woodland	43	***Populus tremula***	**Aspen**
1987+	Cas	Woodland	7	*Populus trichocarpa*	Western Balsam-poplar
1987+	Cas	Woodland	36	*Populus x canadensis = P. deltoides x nigra*	Hybrid Black-poplar
1987+	Cas	Woodland	1	*Populus x canadensis 'Robusta' = P. deltoides x nigra*	Hybrid Black-poplar
1987+	Cas	Woodland	1	*Populus x canadensis 'Serotina' = P. deltoides x nigra*	Hybrid Black-poplar
1987+	Cas	Woodland	7	*Populus x canescens = P. alba x tremula*	Grey Poplar
1987+	Cas	Woodland	1	*Populus x generosa = P. deltoides x trichocarpa*	Generous Poplar
1987+	Cas	Woodland	1	*Populus x jackii = P. balsamifera x deltoides*	Balm-of-Gilead

1987+	Native	Aquatic	3	***Potamogeton alpinus***	**Red Pondweed**
1987+	Native	Aquatic	32	*Potamogeton berchtoldii*	Small Pondweed
1916	Native	Aquatic	0	*Potamogeton coloratus*	Fen Pondweed
1987+	Native	Aquatic	45	*Potamogeton crispus*	Curled Pondweed
1987+	Native	Aquatic	2	***Potamogeton filiformis***	**Slender-leaved Pondweed**
1906	Native	Aquatic	0	*Potamogeton gramineus*	Various-leaved Pondweed
1987+	Native	Aquatic	11	***Potamogeton lucens***	**Shining Pondweed**
1987+	Native	Aquatic	70	*Potamogeton natans*	Broad-leaved Pondweed
1987+	Native	Aquatic	3	***Potamogeton obtusifolius***	**Blunt-leaved Pondweed**
1987+	Native	Aquatic	24	***Potamogeton pectinatus***	**Fennel Pondweed**
1987+	Native	Aquatic	21	***Potamogeton perfoliatus***	**Perfoliate Pondweed**
1987+	Native	Moorland	30	*Potamogeton polygonifolius*	Bog Pondweed
1987+	Native	Aquatic	11	*Potamogeton pusillus*	Lesser Pondweed
1987+	Native	Aquatic	3	***Potamogeton x bottnicus = P. pectinatus x vaginatus***	**Bothnian Pondweed**
1973	Native	Aquatic	0	*Potamogeton x cooperi = P. crispus x perfoliatus*	Cooper's Pondweed
1987+	Native	Aquatic	1	***Potamogeton x nitens = P. gramineus x perfoliatus***	**Bright-leaved Pondweed**
1987+	Native	Aquatic	5	***Potamogeton x olivaceus = P. alpinus x crispus***	**Graceful Pondweed**
1987+	Native	Aquatic	18	***Potamogeton x salicifolius = P. lucens x perfoliatus***	**Willow-leaved Pondweed**
1987+	Native	Moorland	1	***Potentilla anglica***	**Trailing Tormentil**
1987+	Native	Wetland	257	*Potentilla anserina*	Silverweed
1959	Native	Grassland	0	*Potentilla argentea*	Hoary Cinquefoil
1987+	Native	Moorland	267	*Potentilla erecta*	Tormentil
1987+	Native	Wetland	109	***Potentilla palustris (Comarum palustre)***	**Marsh Cinquefoil**
1987+	Cas	Grassland	2	*Potentilla recta*	Sulphur Cinquefoil
1987+	Native	Grassland	95	*Potentilla reptans*	Creeping Cinquefoil
1987+	Native	Woodland	207	*Potentilla sterilis*	Barren Strawberry
1866	Native	Grassland	0	*Potentilla tabernaemontani*	Spring Cinquefoil
1987+	Native	Moorland	2	***Potentilla x mixta = P. anglica x reptans***	**A hybrid Cinquefoil**
				Poterium	[See *Sanguisorba*]
1987+	Cas	Woodland	1	*Primula elatior*	Oxlip
1970+	Neo	Wetland	2	***Primula florindae***	**Tibetan Cowslip**
1987+	Cas	Riverside	1	*Primula pulverulenta*	Mealy Cowslip
1987+	Native	Coast	37	***Primula veris***	**Cowslip**
1987+	Native	Woodland	247	*Primula vulgaris*	Primrose
1987+	Native	Coast	16	***Primula x polyantha = P. veris x vulgaris***	**False Oxlip**
1987+	Cas	Woodland	2	*Primula x polyantha cultivar = P. veris x vulgaris*	Cultivated Primrose
1987+	Native	Grassland	278	*Prunella vulgaris*	Selfheal
1987+	Native	Woodland	178	***Prunus avium***	**Wild Cherry**

1987+	Cas	Woodland	11	***Prunus cerasifera***	**Cherry Plum**
1987+	Cas	Woodland	1	*Prunus cerasus*	Dwarf Cherry
1987+	Arc	Woodland	30	*Prunus domestica*	Wild Plum
1987+	Arc	Woodland	2	*Prunus domestica subsp. insititia*	Wild Plum
1960+	Neo	Woodland	34	*Prunus laurocerasus*	Cherry Laurel
1987+	Cas	Woodland	8	*Prunus lusitanica*	Portugal Laurel
1987+	Native	Woodland	71	***Prunus padus***	**Bird Cherry**
1987+	Cas	Woodland	1	*Prunus serrulata*	Japanese Cherry
1987+	Native	Woodland	153	*Prunus spinosa*	Blackthorn
1930+	Neo	Rock	22	*Pseudofumaria lutea*	Yellow Corydalis
1867	Native	Grassland	0	*Pseudorchis albida*	Small-white Orchid
1945+	Neo	Woodland	75	***Pseudotsuga menziesii***	**Douglas Fir**
1987+	Native	Grassland	213	*Pteridium aquilinum*	Bracken
1839+	Neo	Ruderal	236	***Puccinellia distans***	**Reflexed Saltmarsh-grass**
1987+	Native	Coast	2	***Puccinellia distans subsp. borealis***	**Northern Saltmarsh-grass**
1987+	Native	Coast	5	***Puccinellia maritima***	**Common Saltmarsh-grass**
1853	Native	Riverside	0	*Pulicaria dysenterica*	Common Fleabane
1997+	Neo	Woodland	1	*Pulmonaria 'Mawson's Blue' [parentage not known]*	Mawson's Lungwort
1886+	Neo	Woodland	2	*Pulmonaria officinalis*	Lungwort
1913	Native	Woodland	0	*Pyrola media*	Intermediate Wintergreen
1987+	Native	Woodland	18	***Pyrola minor***	**Common Wintergreen**
1987+	Cas	Woodland	2	*Pyrus communis*	Pear
1987+	Cas	Woodland	1	*Pyrus communis agg.*	Pear
1987+	Cas	Woodland	3	*Quercus cerris*	Turkey Oak
1987+	Cas	Woodland	1	*Quercus ilex*	Evergreen Oak
1987+	Native	Woodland	56	***Quercus petraea***	**Sessile Oak**
1987+	Native	Woodland	175	*Quercus robur*	Pedunculate Oak
1987+	Cas	Woodland	8	*Quercus rubra*	Red Oak
1987+	Native	Woodland	4	***Quercus x rosacea = Q. petraea x robur***	**Hybrid Oak**
1878	Native	Grassland	0	*Radiola linoides*	Allseed
1987+	Native	Grassland	301	*Ranunculus acris*	Meadow Buttercup
1987+	Native	Aquatic	33	***Ranunculus aquatilis***	**Common Water-crowfoot**
1987+	Native	Aquatic	6	*Ranunculus aquatilis agg.*	A Water-crowfoot
1966	Arc	Arable	0	*Ranunculus arvensis*	Corn Buttercup
1987+	Native	Woodland	13	***Ranunculus auricomus***	**Goldilocks Buttercup**
1954	Cas	Aquatic	0	*Ranunculus baudotii*	Brackish Water-crowfoot
1987+	Native	Grassland	56	***Ranunculus bulbosus***	**Bulbous Buttercup**
1989	Native	Aquatic	3	*Ranunculus circinatus*	Fan-leaved Water-crowfoot
1987+	Native	Aquatic	9	***Ranunculus circinatus x fluitans***	**Greenlaw Water-crowfoot**
1987+	Native	Woodland	224	*Ranunculus ficaria (Ficaria verna)*	Lesser Celandine

1987+	Native	Ruderal	18	*Ranunculus ficaria subsp. bulbilifer (Ficaria verna subsp. verna)*	Lesser Celandine
1987+	Native	Woodland	23	*Ranunculus ficaria subsp. ficaria (Ficaria verna subsp. fertilis)*	Lesser Celandine
1987+	Native	Wetland	160	*Ranunculus flammula*	Lesser Spearwort
1987+	Native	Aquatic	16	***Ranunculus fluitans***	**River Water-crowfoot**
1987+	Native	Aquatic	103	*Ranunculus hederaceus*	Ivy-leaved Crowfoot
1987+	Native	Aquatic	5	***Ranunculus lingua***	**Greater Spearwort**
1987+	Native	Aquatic	11	***Ranunculus peltatus***	**Pond Water-crowfoot**
1987+	Native	Aquatic	68	*Ranunculus penicillatus*	Stream Water-crowfoot
1987+	Native	Grassland	429	*Ranunculus repens*	Creeping Buttercup
1987+	Arc	Arable	1	***Ranunculus sardous***	**Hairy Buttercup**
1987+	Native	Aquatic	25	*Ranunculus sceleratus*	Celery-leaved Buttercup
1987+	Native	Aquatic	17	***Ranunculus trichophyllus***	**Thread-leaved Water-crowfoot**
1900	Error ?	Aquatic	0	*Ranunculus x bachii agg. [R. aquatilis x fluitans, R. fluitans x trichophyllus]*	A hybrid Water-crowfoot
1987+	Native	Aquatic	13	***Ranunculus x kelchoensis = R. fluitans x peltatus***	**Kelso Water-crowfoot**
1987+	Arc	Arable	63	*Raphanus raphanistrum subsp. raphanistrum*	Wild Radish
1987+	Cas	Arable	5	*Raphanus sativus*	Fodder Radish
1987+	Cas	Ruderal	1	*Reseda lutea*	Wild Mignonette
1987+	Arc	Grassland	46	***Reseda luteola***	**Weld**
1980+	Neo	Ruderal	6	*Rheum x rhabarbarum = R. palmatum x rhaponticum*	Rhubarb
1987+	Native	Grassland	66	***Rhinanthus minor***	**Yellow-rattle**
1987+	Native	Grassland	1	*Rhinanthus minor subsp. minor*	Yellow-rattle
1962	Data deficient	Grassland	0	*Rhinanthus minor subsp. stenophyllus*	Yellow-rattle
1987+	Cas	Woodland	4	*Rhododendron luteum*	Yellow Azalea
1960+	Neo	Woodland	76	***Rhododendron ponticum***	**Rhododendron**
1872+	Neo	Woodland	9	*Ribes alpinum*	Mountain Currant
1987+	Arc	Woodland	55	*Ribes nigrum*	Black Currant
1987+	Arc	Woodland	75	*Ribes rubrum*	Red Currant
1960+	Neo	Woodland	41	*Ribes sanguineum*	Flowering Currant
1984	Error ?	Woodland	0	*Ribes spicatum*	Downy Currant
1987+	Arc	Woodland	113	*Ribes uva-crispa*	Gooseberry
1987+	Cas	Woodland	1	*Robinia pseudoacacia*	False-acacia
1987+	Cas	Woodland	1	*Robinia pseudoacacia var. inermis*	False-acacia
1987+	Cas	Arable	1	*Rorippa austriaca*	Austrian Yellow-cress
1987+	Native	Wetland	5	***Rorippa islandica***	**Northern Yellow-cress**
1987+	Native	Aquatic	74	*Rorippa microphylla (Nasturtium microphyllum)*	Narrow-fruited Water-cress
1987+	Native	Aquatic	10	***Rorippa nasturtium-aquaticum (Nasturtium officinale)***	**Water-cress**

1987+	Native	Aquatic	190	*Rorippa nasturtium-aquaticum agg. (Nasturtium officinale agg.)*	Water-cress
1987+	Native	Riverside	30	*Rorippa palustris*	Marsh Yellow-cress
1987+	Native	Riverside	28	*Rorippa sylvestris*	Creeping Yellow-cress
2004+	Neo	Riverside	4	*Rorippa x anceps = R. amphibia x sylvestris*	A hybrid Yellow-cress
1987+	Native	Aquatic	16	*Rorippa x sterilis = R. microphylla x nastutrium-aquaticum (Nasturtium x sterile = N. microphyllum x officinale)*	Hybrid Water-cress
1999+	Neo	Woodland	3	*Rosa arvensis*	Field-rose
1987+	Native	Woodland	4	*Rosa caesia*	Dog-rose
1987+	Native	Woodland	28	*Rosa caesia subsp. caesia*	Hairy Dog-rose
1987+	Native	Woodland	1	*Rosa caesia subsp. caesia x canina*	A hybrid Rose
1987+	Native	Woodland	27	*Rosa caesia subsp. glauca (R. c. subsp. vosagiaca)*	Glaucous Dog-rose
1987+	Native	Woodland	6	*Rosa caesia subsp. glauca x canina (R. c. subsp. vosagiaca x canina)*	A hybrid Rose
1987+	Native	Woodland	53	*Rosa canina*	Dog-rose
1987+	Native	Woodland	183	***Rosa canina agg.***	**Dog-rose**
1873	Native	Woodland	0	*Rosa canina group Dumales*	Dog-rose
1987+	Cas	Woodland	8	*Rosa ferruginea*	Red-leaved Rose
1987+	Cas	Woodland	1	*Rosa 'Hollandica' [parentage not known]*	Dutch Rose
1880	Cas	Woodland	0	*Rosa micrantha*	Small-flowered Sweet-briar
1987+	Native	Woodland	70	*Rosa mollis*	Soft Downy-rose
1987+	Native	Woodland	53	*Rosa mollis agg.*	Downy-rose
1987+	Cas	Woodland	2	*Rosa multiflora*	Many-flowered Rose
1987+	Native	Rock	33	***Rosa pimpinellifolia (R. spinosissima)***	**Burnet Rose**
1987+	Native	Woodland	35	***Rosa rubiginosa***	**Sweet-briar**
1960+	Neo	Coast	30	***Rosa rugosa***	**Japanese Rose**
1987+	Native	Woodland	28	*Rosa sherardii*	Sherard's Downy-rose
1987+	Cas	Woodland	2	*Rosa virginiana*	Virginian Rose
1987+	Native	Woodland	99	*Rosa x dumalis = R. caesia x canina*	A hybrid Rose
1987+	Native	Woodland	2	*Rosa x glaucoides (f x m) = R. caesia x mollis (f x m)*	A hybrid Rose
1987+	Native	Woodland	11	*Rosa x glaucoides = R. caesia x mollis*	A hybrid Rose
1987+	Native	Woodland	1	*Rosa x involuta (f x m) = R. sheradii x spinosissima (f x m)*	A hybrid Rose
1850	Native	Woodland	0	*Rosa x involuta = R. sheradii x spinosissima*	A hybrid Rose
1987+	Native	Woodland	1	*Rosa x irregularis = R. arvensis x canina*	A hybrid Rose
1987+	Cas	Woodland	1	*Rosa x margerisonii = R. caesia x spinosissima*	A hybrid Rose
1987+	Native	Woodland	9	*Rosa x molletorum = R. canina x mollis*	A hybrid Rose

1987+	Native	Woodland	2	*Rosa x nitidula = R. canina x rubiginosa*	A hybrid Rose
1987+	Native	Woodland	1	*Rosa x rothschildii = R. canina x sherardii*	A hybrid Rose
1987+	Native	Woodland	1	*Rosa x sabinii = R. mollis x pimpinellifolia*	A hybrid Rose
1987+	Native	Woodland	1	*Rosa x suberecta = R. rubiginosa x sherardii*	A hybrid Rose
1984	Native	Woodland	2	*Rubus amplificatus*	Bramble
1985	Native	Woodland	2	*Rubus anisacanthos*	Bramble
1991+	Neo	Woodland	2	*Rubus armeniacus*	Himalayan-giant Bramble
1987+	Native	Woodland	19	***Rubus caesius***	**Dewberry**
1987+	Native	Moorland	5	***Rubus chamaemorus***	**Cloudberry**
1987+	Native	Woodland	14	*Rubus dasyphyllus*	Bramble
1984	Native	Woodland	6	*Rubus drejeri*	Bramble
1985	Native	Woodland	2	*Rubus eboracensis*	Bramble
1984	Native	Woodland	4	*Rubus echinatoides*	Bramble
1984	Native	Woodland	1	*Rubus errabundus*	Bramble
1984	Native	Woodland	2	*Rubus fissus*	Bramble
1987+	Native	Woodland	252	*Rubus fruticosus agg.*	Bramble
1987+	Native	Woodland	235	*Rubus idaeus*	Raspberry
1984	Native	Woodland	4	*Rubus infestus*	Bramble
1973+	Neo	Woodland	2	*Rubus laciniatus*	Cut-leaved Bramble
1985	Native	Woodland	16	*Rubus latifolius*	Bramble
1984	Native	Woodland	3	*Rubus leptothyrsos*	Bramble
1984	Native	Woodland	3	*Rubus lindebergii*	Bramble
1978	Native	Woodland	1	*Rubus mucronulatus*	Bramble
1984	Native	Woodland	2	*Rubus nemoralis*	Bramble
1787+	Neo	Woodland	1	*Rubus nessensis*	Bramble
1987+	Native	Woodland	4	*Rubus newtonii*	Bramble
1985	Native	Woodland	2	*Rubus polyanthemus*	Bramble
1985	Native	Woodland	15	*Rubus radula*	Bramble
1987+	Native	Woodland	2	***Rubus saxatilis***	**Stone Bramble**
1985	Native	Woodland	3	*Rubus septentrionalis*	Bramble
1991+	Neo	Woodland	4	*Rubus spectabilis*	Salmonberry
1969	Native	Woodland	0	*Rubus ulmifolius*	Bramble
1985	Native	Woodland	1	*Rubus wirralensis*	Bramble
2005+	Neo	Riverside	1	*Rudbeckia laciniata*	Coneflower
1987+	Native	Grassland	359	*Rumex acetosa*	Common Sorrel
1987+	Native	Grassland	217	*Rumex acetosella*	Sheep's Sorrel
1987+	Native	Grassland	113	*Rumex acetosella subsp. acetosella*	Sheep's Sorrel
1987+	Native	Riverside	12	***Rumex conglomeratus***	**Clustered Dock**
1987+	Native	Wetland	228	*Rumex crispus*	Curled Dock
1987+	Native	Wetland	21	*Rumex crispus subsp. crispus*	Curled Dock
1987+	Native	Coast	22	*Rumex crispus subsp. littoreus*	Curled Dock
1982	Neo	Aquatic	0	*Rumex hydrolapathum*	Water Dock
1955+	Neo	Ruderal	54	***Rumex longifolius***	**Northern Dock**

1987+	Native	Wetland	2	***Rumex maritimus***	**Golden Dock**
1987+	Native	Grassland	388	*Rumex obtusifolius*	Broad-leaved Dock
1960	Cas	Wetland	0	*Rumex palustris*	Marsh Dock
1902	Arc	Grassland	0	*Rumex pseudoalpinus (R. alpinus)*	Monk's-rhubarb
1987+	Native	Woodland	157	*Rumex sanguineus*	Wood Dock
1987+	Native	Grassland	1	*Rumex x dufftii = R. obtusifolius x sanguineus*	A hybrid Dock
1987+	Native	Grassland	4	***Rumex x hybridus = R. longifolius x obtusifolius***	**A hybrid Dock**
1987+	Native	Grassland	7	*Rumex x pratensis = R. crispus x obtusifolius*	A hybrid Dock
1987+	Native	Grassland	4	***Rumex x propinquus = R. crispus x longifolius***	**A hybrid Dock**
1952+	Neo	Woodland	4	*Ruscus aculeatus*	Butcher's-broom
1987+	Native	Ruderal	59	*Sagina apetala (S. apetala agg.)*	Annual Pearlwort
1987+	Native	Coast	10	***Sagina apetala subsp. apetala (S. apetala)***	**Fringed Pearlwort**
1987+	Native	Ruderal	42	*Sagina apetala subsp. erecta (S. filicaulis)*	Annual Pearlwort
1987+	Native	Ruderal	36	***Sagina maritima***	**Sea Pearlwort**
1987+	Native	Wetland	10	***Sagina nodosa***	**Knotted Pearlwort**
1987+	Native	Grassland	234	*Sagina procumbens*	Procumbent Pearlwort
1987+	Native	Moorland	1	***Sagina subulata***	**Heath Pearlwort**
1896+	Neo	Aquatic	0	*Sagittaria sagittifolia*	Arrowhead
1987+	Arc	Riverside	59	*Salix alba*	White Willow
1987+	Cas	Woodland	2	*Salix alba var. vitellina*	Golden Willow
1987+	Native	Wetland	113	*Salix aurita*	Eared Willow
1987+	Native	Woodland	165	*Salix caprea*	Goat Willow
1987+	Cas	Woodland	1	*Salix caprea subsp. sphacelata*	Goat Willow
1987+	Native	Woodland	230	*Salix cinerea subsp. oleifolia*	Rusty Willow
1987+	Cas	Woodland	2	*Salix daphnoides*	European Violet-willow
1987+	Arc	Riverside	110	*Salix x fragilis sens. lat. (S. euxina)*	Crack Willow
1987+	Arc	Riverside	1	*Salix fragilis var. decipiens (S. euxina)*	Crack Willow
1987+	Cas	Riverside	2	*Salix fragilis var. russelliana (S. x fragilis 'russelliana')*	Bedford Willow
1987+	Native	Riverside	2	***Salix myrsinifolia***	**Dark-leaved Willow**
1987+	Native	Wetland	37	***Salix pentandra***	**Bay Willow**
1987+	Native	Wetland	6	***Salix phylicifolia***	**Tea-leaved Willow**
1987+	Native	Riverside	42	*Salix purpurea*	Purple Willow
1987+	Native	Moorland	35	***Salix repens***	**Creeping Willow**
1987+	Native	Wetland	5	*Salix repens var. fusca*	Creeping Willow
1987+	Cas	Riverside	1	*Salix triandra*	Almond Willow
1987+	Cas	Riverside	3	*Salix triandra var. hoffmanniana*	Almond Willow
1987+	Arc	Riverside	118	*Salix viminalis*	Osier
1987+	Native	Wetland	1	*Salix x ambigua = S. aurita x repens*	A hybrid Willow
1987+	Native	Woodland	4	*Salix x capreola = S. aurita x caprea*	A hybrid Willow

1800	Error ?	Woodland	0	*Salix x coriacea = S. aurita x myrsinifolia*	A hybrid Willow
1987+	Cas	Woodland	1	*Salix x ehrhartiana = S. alba x pentandra*	A hybrid Willow
1993+	Neo	Woodland	4	*Salix x fruticosa = S. aurita x viminalis*	Shrubby Osier
1800	Error ?	Woodland	0	*Salix x laschiana = S. caprea x repens*	A hybrid Willow
1987+	Native	Woodland	2	***Salix x laurina = S. cinerea x phylicifolia***	**Laurel-leaved Willow**
1987+	Native	Woodland	26	*Salix x multinervis = S. aurita x cinerea*	A hybrid Willow
1987+	Native	Woodland	27	*Salix x reichardtii = S. caprea x cinerea*	A hybrid Willow
1987+	Cas	Woodland	3	*Salix x rubens = S. alba x fragilis (S. x fragilis)*	A hybrid Willow
1987+	Cas	Woodland	5	*Salix x rubens nothovar. basfordiana f. sanguinea = S. alba var. vitellina f. sanguinea x fragilis (S. x fragilis nothovar. basfordiana f. sanguinea = S. alba var. vitellina f. sanguinea x euxina*	A hybrid Willow
1987+	Cas	Woodland	2	*Salix x sepulcralis = S. alba x babylonica*	Weeping Willow
1987+	Cas	Woodland	1	*Salix x sepulcralis nothovar. chrysocoma = S. alba var. vitellina x babylonica*	Weeping Willow
1987+	Cas	Woodland	17	*Salix x sericans (S. x smithiana) = S. caprea x viminalis*	Broad-leaved Osier
1990+	Neo	Woodland	5	*Salix x smithiana (S. x holosericea) = S. cinerea x viminalis*	Silky-leaved Osier
1987+	Cas	Woodland	1	*Salix x stipularis = S. aurita x caprea x viminalis*	Eared Osier
1987+	Native	Riverside	1	***Salix x strepida = S. cinerea x myrsinifolia (S. x puberula)***	**A hybrid Willow**
1960	Cas	Coast	0	*Salsola kali subsp. kali*	Prickly Saltwort
1952	Cas	Ruderal	0	*Salvia verbenaca*	Wild Clary
1956	Arc	Grassland	0	*Sambucus ebulus*	Dwarf Elder
1987+	Native	Woodland	273	*Sambucus nigra*	Elder
1987+	Cas	Woodland	2	*Sambucus nigra 'Laciniata'*	Cut-leaved Elder
1956+	Neo	Woodland	47	***Sambucus racemosa***	**Red-berried Elder**
1924	Native	Coast	0	*Samolus valerandi*	Brookweed
1987+	Native	Grassland	2	***Sanguisorba minor subsp. minor (Poterium sanguisorba subsp. sanguisorba)***	**Salad Burnet**
1978/ 1987+	ENative/ Neo	Wetland	1	***Sanguisorba officinalis***	**Great Burnet**
1987+	Native	Woodland	33	***Sanicula europaea***	**Sanicle**
1961+	Neo	Grassland	2	*Saponaria officinalis*	Soapwort
1995+	Neo	Woodland	1	*Sasa palmata*	Broad-leaved Bamboo

1968	Neo	Ruderal	0	*Saxifraga cymbalaria*	Celandine Saxifrage
1987+	Native	Grassland	82	***Saxifraga granulata***	**Meadow Saxifrage**
1900	Native	Moorland	0	*Saxifraga hirculus*	Marsh Saxifrage
1845+	Neo	Woodland	7	*Saxifraga x urbium = S. spathularis x umbrosa*	Londonpride
1987+	Native	Grassland	4	***Scabiosa columbaria***	**Small Scabious**
1960	Arc	Arable	0	*Scandix pecten-veneris*	Shepherd's-needle
				Schedonorus	[See *Festuca*]
1987+	Native	Riverside	12	***Schoenoplectus lacustris***	**Common Club-rush**
1987+	Native	Riverside	1	***Schoenoplectus tabernaemontani***	**Grey Club-rush**
1987+	Native	Coast	2	***Schoenus nigricans***	**Black Bog-rush**
				Scilla	[See also *Chionodoxa*]
1975+	Neo	Woodland	3	***Scilla lilio-hyacinthus (S. liliohyacinthus)***	**Pyrenean Squill**
1987+	Native	Coast	1	***Scilla verna***	**Spring Squill**
1987+	Native	Riverside	43	***Scirpus sylvaticus***	**Wood Club-rush**
1987+	Native	Grassland	19	***Scleranthus annuus***	**Annual Knawel**
				Scorzoneroides	[See *Leontodon*]
1957+	Neo	Wetland	2	*Scrophularia auriculata*	Water Figwort
1987+	Native	Woodland	94	*Scrophularia nodosa*	Common Figwort
1833+	Neo	Riverside	77	***Scrophularia umbrosa***	**Green Figwort**
1991+	Neo	Woodland	2	*Scrophularia vernalis*	Yellow Figwort
1987+	Cas	Ruderal	1	*Scutellaria altissima*	Somerset Skullcap
1987+	Native	Wetland	1	***Scutellaria galericulata***	**Skullcap**
1987+	Cas	Arable	5	***Secale cereale***	**Rye**
1987+	Native	Rock	78	*Sedum acre*	Biting Stonecrop
1987+	Neo	Ruderal	38	***Sedum album***	**White Stonecrop**
1987+	Cas	Rock	4	*Sedum forsterianum*	Rock Stonecrop
1987+	Native	Coast	8	***Sedum rosea***	**Roseroot**
1949+	Neo	Rock	4	*Sedum rupestre*	Reflexed Stonecrop
1987+	Cas	Rock	2	*Sedum spurium*	Caucasian Stonecrop
1829+	Neo	Grassland	6	*Sedum telephium*	Orpine
1981+	Neo	Grassland	1	*Sedum telephium subsp. fabaria*	Orpine
1987+	Native	Wetland	15	***Sedum villosum***	**Hairy Stonecrop**
1987+	Native	Wetland	18	***Selaginella selaginoides***	**Lesser Clubmoss**
1939+	Neo	Rock	2	*Sempervivum tectorum*	House-leek
1987+	Native	Wetland	26	***Senecio aquaticus***	**Marsh Ragwort**
1987+	Cas	Ruderal	2	*Senecio cineraria*	Silver Ragwort
1969	Native	Grassland	0	*Senecio erucifolius*	Hoary Ragwort
1878+	Neo	Woodland	3	*Senecio fluviatilis (S. sarracenicus)*	Broad-leaved Ragwort
1987+	Native	Grassland	330	*Senecio jacobaea*	Common Ragwort
1962+	Neo	Ruderal	6	*Senecio squalidus*	Oxford Ragwort
1987+	Native	Rock	79	*Senecio sylvaticus*	Heath Groundsel
1987+	Native	Ruderal	72	*Senecio viscosus*	Sticky Groundsel
1987+	Native	Arable	250	*Senecio vulgaris*	Groundsel
1990+	Neo	Ruderal	8	*Senecio vulgaris var. hibernicus*	Rayed Groundsel

1987+	Native	Arable	179	*Senecio vulgaris var. vulgaris*	Groundsel
1987+	Native	Riverside	8	*Senecio x ostenfeldii = S. aquaticus x jacobea*	Hybrid Ragwort
1987+	Cas	Woodland	2	*Sequoia sempervirens*	Coastal Redwood
1987+	Cas	Woodland	16	***Sequoiadendron giganteum***	**Wellingtonia**
1987+	Native	Coast	3	***Seriphidium maritimum (Artemisia maritima)***	**Sea Wormwood**
1987+	Cas	Arable	1	***Setaria italica***	**Foxtail Bristle-grass**
1987+	Cas	Arable	1	***Setaria pumila***	**Yellow Bristle-grass**
1987+	Cas	Arable	1	***Setaria verticillata***	**Rough Bristle-grass**
1987+	Native	Grassland	18	***Sherardia arvensis***	**Field Madder**
2008+	Neo	Ruderal	1	*Sidalcea malviflora*	Greek Mallow
1987+	Native	Grassland	4	***Silaum silaus***	**Pepper-saxifrage**
				Silene	[See also *Lychnis*]
1987+	Native	Woodland	247	*Silene dioica*	Red Campion
1987+	Arc	Grassland	62	*Silene latifolia*	White Campion
1971	Arc	Arable	0	*Silene noctiflora*	Night-flowering Catchfly
1987+	Native	Coast	29	***Silene uniflora***	**Sea Campion**
1987+	Native	Grassland	28	***Silene vulgaris***	**Bladder Campion**
1987+	Native	Grassland	31	*Silene x hampeana = S. dioica x latifolia*	Hybrid Campion
1987+	Cas	Grassland	6	***Silybum marianum***	**Milk Thistle**
1958+	Neo	Arable	18	***Sinapis alba***	**White Mustard**
1987+	Arc	Arable	126	*Sinapis arvensis*	Charlock
1931	Cas	Grassland	0	*Sison amomum*	Stone Parsley
1987+	Arc	Arable	107	*Sisymbrium officinale*	Hedge Mustard
1960+	Neo	Ruderal	3	*Sisymbrium orientale*	Eastern Rocket
1960	Cas	Ruderal	0	*Sisymbrium polyceratium*	Horned Mustard
1961	Cas	Ruderal	0	*Sisymbrium runcinatum*	A Rocket
1902	Error ?	Wetland	0	*Sium latifolium*	Greater Water-parsnip
1987+	Arc	Coast	1	***Smyrnium olusatrum***	**Alexanders**
1987+	Native	Wetland	18	***Solanum dulcamara***	**Bittersweet**
1987+	Cas	Ruderal	3	*Solanum nigrum*	Black Nightshade
1987+	Cas	Arable	21	*Solanum tuberosum*	Potato
2001+	Neo	Ruderal	6	*Soleirolia soleirolii*	Mind-your-own-business
2009+	Neo	Ruderal	1	*Solidago canadensis*	Canadian Goldenrod
1992+	Neo	Riverside	7	*Solidago gigantea*	Early Goldenrod
1987+	Native	Rock	36	***Solidago virgaurea***	**Goldenrod**
1987+	Native	Grassland	81	*Sonchus arvensis*	Perennial Sow-thistle
1987+	Native	Arable	282	*Sonchus asper*	Prickly Sow-thistle
1987+	Native	Arable	82	*Sonchus oleraceus*	Smooth Sow-thistle
1987+	Cas	Woodland	28	*Sorbus aria*	Common Whitebeam
1987+	Cas	Woodland	11	*Sorbus aria agg.*	Whitebeam
1987+	Native	Woodland	277	*Sorbus aucuparia*	Rowan
1987+	Cas	Woodland	3	*Sorbus decipiens*	Broad-leaved Whitebeam
1987+	Cas	Woodland	26	*Sorbus intermedia*	Swedish Whitebeam
1987+	Native	Woodland	1	***Sorbus rupicola***	**Rock Whitebeam**

1987+	Cas	Woodland	1	*Sorbus x thuringiaca = S. aria x aucuparia*	German Service-tree
1987+	Native	Aquatic	17	***Sparganium emersum***	**Unbranched Bur-reed**
1987+	Native	Aquatic	156	*Sparganium erectum*	Branched Bur-reed
1987+	Native	Aquatic	17	*Sparganium erectum subsp. neglectum*	Branched Bur-reed
1982	Native	Aquatic	0	*Sparganium natans*	Least Bur-reed
1987+	Arc	Arable	110	*Spergula arvensis*	Corn Spurrey
1845+	Neo	Ruderal	249	***Spergularia marina***	**Lesser Sea-spurrey**
1987+	Native	Coast	12	***Spergularia media***	**Greater Sea-spurrey**
1987+	Native	Grassland	30	***Spergularia rubra***	**Sand Spurrey**
1997+	Neo	Woodland	3	*Spiraea douglasii subsp. douglasii*	Steeple-bush
1831+	Neo	Woodland	1	*Spiraea salicifolia*	Bridewort
2001+	Neo	Woodland	2	*Spiraea x pseudosalicifolia = S. douglasii x salicifolia*	Confused Bridewort
1999+	Neo	Woodland	1	*Spiraea x rosalba = S. alba x salicifolia*	Intermediate Bridewort
1987+	Arc	Arable	3	***Stachys arvensis***	**Field Woundwort**
1987+	Native	Grassland	5	***Stachys officinalis (Betonica officinalis)***	**Betony**
1987+	Native	Riverside	140	*Stachys palustris*	Marsh Woundwort
1987+	Native	Woodland	231	*Stachys sylvatica*	Hedge Woundwort
1987+	Native	Riverside	20	*Stachys x ambigua = S. palustris x sylvatica*	Hybrid Woundwort
1987+	Native	Grassland	266	*Stellaria graminea*	Lesser Stitchwort
1987+	Native	Woodland	164	***Stellaria holostea***	**Greater Stitchwort**
1987+	Native	Arable	333	*Stellaria media*	Common Chickweed
1987+	Data deficient	Riverside	2	*Stellaria neglecta*	Greater Chickweed
1987+	Native	Woodland	48	***Stellaria nemorum***	**Wood Stitchwort**
1987+	Native	Grassland	27	***Stellaria pallida***	**Lesser Chickweed**
1987+	Native	Wetland	2	***Stellaria palustris***	**Marsh Stitchwort**
1987+	Native	Wetland	224	*Stellaria uliginosa (S. alsine)*	Bog Stitchwort
1987+	Cas	Coast	1	***Suaeda maritima***	**Annual Sea-blite**
1987+	Native	Moorland	188	*Succisa pratensis*	Devil's-bit Scabious
1945+	Neo	Woodland	77	***Symphoricarpos albus***	**Snowberry**
2012+	Neo	Ruderal	2	*Symphytum 'Hidcote Blue' = S. ?asperum x grandiflorum x officinale*	Hidcote Comfrey (blue form)
2012+	Neo	Ruderal	2	*Symphytum 'Hidcote Pink' = S. ?asperum x grandiflorum x officinale*	Hidcote Comfrey (pink form)
1831	Error ?	Riverside	0	*Symphytum officinale*	Common Comfrey
1983+	Neo	Ruderal	4	*Symphytum orientale*	White Comfrey
1831+	Neo	Riverside	76	***Symphytum tuberosum***	**Tuberous Comfrey**
1834+	Neo	Riverside	109	***Symphytum x uplandicum = S. asperum x officinale***	**Russian Comfrey**
1960+	Neo	Woodland	23	*Syringa vulgaris*	Lilac
1931	Cas	Woodland	0	*Tamus communis*	Black Bryony
1987+	Arc	Ruderal	94	*Tanacetum parthenium*	Feverfew

1987+	Native	Riverside	46	*Tanacetum vulgare*	Tansy
1980+	Neo	Grassland	1	*Taraxacum acroglossum*	Dandelion
1979+	Neo	Grassland	2	*Taraxacum adiantifrons (T. hemicyclum)*	Dandelion
1986	Native	Grassland	1	*Taraxacum alatum*	Dandelion
1979	Native	Grassland	1	*Taraxacum ancistrolobum*	Dandelion
1986+	Neo	Grassland	2	*Taraxacum angustisquameum*	Dandelion
1986	Native	Grassland	1	*Taraxacum argutum*	Lesser Dandelion
1986	Native	Grassland	4	*Taraxacum atactum*	Dandelion
1986	Native	Grassland	3	*Taraxacum brachyglossum*	Lesser Dandelion
1986	Native	Grassland	1	*Taraxacum bracteatum*	Dandelion
1986	Native	Grassland	1	*Taraxacum caloschistum*	Dandelion
1981	Native	Grassland	1	*Taraxacum cordatum*	Dandelion
1979	Native	Grassland	1	*Taraxacum croceiflorum*	Dandelion
1986	Native	Grassland	4	*Taraxacum cyanolepis*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum dilaceratum*	Dandelion
1986	Native	Grassland	15	*Taraxacum duplidentifrons*	Dandelion
1986	Native	Grassland	1	*Taraxacum ekmanii*	Dandelion
1986	Native	Grassland	5	*Taraxacum euryphyllum*	Dandelion
1986	Native	Grassland	6	*Taraxacum expallidiforme*	Dandelion
1987+	Native	Wetland	25	*Taraxacum faeroense*	Marsh Dandelion
1986	Native	Grassland	2	*Taraxacum fasciatum*	Dandelion
1986	Native	Grassland	1	*Taraxacum fulvicarpum*	Dandelion
1986	Native	Grassland	2	*Taraxacum fulviforme*	Lesser Dandelion
1979+	Neo	Grassland	2	*Taraxacum fusciflorum*	Dandelion
1986	Native	Grassland	2	*Taraxacum gelertii*	Dandelion
1986	Native	Grassland	1	*Taraxacum hamatiforme*	Dandelion
1986	Native	Grassland	6	*Taraxacum hamatum*	Dandelion
1986	Native	Grassland	1	*Taraxacum hamiferum*	Dandelion
1979+	Neo	Grassland	3	*Taraxacum huelphersianum*	Dandelion
1986	Native	Grassland	2	*Taraxacum inane*	Dandelion
1986	Native	Grassland	4	*Taraxacum insigne*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum interveniens*	Dandelion
1979+	Neo	Grassland	2	*Taraxacum kernianum*	Dandelion
1986	Native	Grassland	9	*Taraxacum lacistophyllum*	Lesser Dandelion
1986+	Neo	Grassland	1	*Taraxacum laeticolor*	Dandelion
1979+	Neo	Grassland	2	*Taraxacum lamprophyllum*	Dandelion
1986	Native	Grassland	2	*Taraxacum laticordatum*	Dandelion
1986	Native	Grassland	1	*Taraxacum lingulatum*	Dandelion
1986	Native	Grassland	1	*Taraxacum longisquameum*	Dandelion
1986	Native	Grassland	4	*Taraxacum maculosum*	Dandelion
1986	Native	Grassland	5	*Taraxacum nordstedtii*	Dandelion
1986	Native	Grassland	4	*Taraxacum oblongatum*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum ochrochlorum*	Dandelion
1987+	Native	Grassland	349	*Taraxacum officinale agg. [all T. spp.]*	Dandelion
1987+	Native	Grassland	3	*Taraxacum oxoniense*	Lesser Dandelion

1986+	Neo	Grassland	1	*Taraxacum pannucium*	Dandelion
1979+	Neo	Grassland	1	*Taraxacum piceatum*	Dandelion
1986	Native	Grassland	10	*Taraxacum polyodon*	Dandelion
1986	Native	Grassland	8	*Taraxacum pseudohamatum*	Dandelion
1986	Native	Grassland	3	*Taraxacum pseudolarssonii*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum retroflexum*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum rhamphodes*	Dandelion
1986	Native	Grassland	1	*Taraxacum rubicundum*	Lesser Dandelion
1986	Native	Grassland	5	*Taraxacum stenoglossum (T. dahlstedtii)*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum stereodes*	Dandelion
1986	Native	Grassland	2	*Taraxacum subbracteatum*	Dandelion
1986	Native	Grassland	4	*Taraxacum subhamatum*	Dandelion
1986	Native	Grassland	2	*Taraxacum subnaevosum*	Dandelion
1986+	Neo	Grassland	1	*Taraxacum undulatiflorum*	Dandelion
1986	Native	Grassland	7	*Taraxacum unguilobum*	Dandelion
1986+	Neo	Grassland	2	*Taraxacum vastisectum*	Dandelion
1987+	Cas	Woodland	1	*Taxodium distichum*	Swamp Cypress
1853+	Neo	Woodland	73	*Taxus baccata*	Yew
1987+	Cas	Woodland	6	*Taxus baccata f. fasciculata*	Irish Yew
1877	Native	Rock	0	*Teesdalia nudicaulis*	Shepherd's Cress
2011+	Neo	Wetland	1	*Telekia speciosa*	Yellow Oxeye
1998+	Neo	Woodland	7	*Tellima grandiflora*	Fringe-cups
1987+	Native	Woodland	158	*Teucrium scorodonia*	Wood Sage
1836	Native	Wetland	0	*Thalictrum flavum*	Common Meadow-rue
1979	Cas	Riverside	0	*Thalictrum lucidum*	Shining Meadow-rue
1987+	Native	Coast	9	***Thalictrum minus***	**Lesser Meadow-rue**
1987+	Arc	Arable	90	*Thlaspi arvense*	Field Penny-cress
1987+	Cas	Woodland	4	*Thuja plicata*	Western Red-cedar
1987+	Native	Grassland	162	***Thymus polytrichus***	**Wild Thyme**
1907	Cas	Ruderal	0	*Thymus pulegioides*	Large Thyme
1987+	Cas	Woodland	1	*Tilia americana*	American Lime
1987+	Cas	Woodland	1	*Tilia cordata*	Small-leaved Lime
1987+	Cas	Woodland	13	*Tilia platyphyllos*	Large-leaved Lime
1987+	Cas	Woodland	88	*Tilia x europaea = T. cordata x platyphyllos*	Lime
1671	Error ?		0	[*Tofieldia pusilla*] [probably North Northumberland north of Berwick]	Scottish Asphodel
2004+	Neo	Riverside	5	*Tolmiea menziesii*	Pick-a-back-plant
1933	Cas	Grassland	0	*Torilis arvensis*	Spreading Hedge-parsley
1987+	Native	Grassland	162	*Torilis japonica*	Upright Hedge-parsley
1987+	Native	Grassland	2	***Torilis nodosa***	**Knotted Hedge-parsley**
1965+	Neo	Woodland	2	*Trachystemon orientalis*	Abraham-Isaac-Jacob
1987+	Native	Grassland	38	*Tragopogon pratensis*	Goat's-beard
1987+	Native	Moorland	73	*Trichophorum cespitosum (T. cespitosum agg.)*	Deergrass

1987+	Native	Moorland	8	***Trichophorum cespitosum nothosubsp. foersteri = T. c. subsp. cespitosum x subsp. germanicum (T. x foersteri = T. cespitosum x germanicum)***	**Swan's Deergrass**
1987+	Native	Moorland	3	***Trichophorum cespitosum subsp. cespitosum (T. cespitosum)***	**Northern Deergrass**
1987+	Native	Moorland	28	*Trichophorum cespitosum subsp. germanicum (T. germanicum)*	Common Deergrass
1987+	Native	Wetland	5	***Trientalis europaea***	**Chickweed-wintergreen**
1987+	Native	Grassland	15	***Trifolium arvense***	**Hare's-foot Clover**
1987+	Native	Grassland	38	*Trifolium campestre*	Hop Trefoil
1987+	Native	Grassland	154	*Trifolium dubium*	Lesser Trefoil
1987+	Native	Coast	1	***Trifolium fragiferum***	**Strawberry Clover**
1939+	Neo	Grassland	23	*Trifolium hybridum*	Alsike Clover
1942	Cas	Arable	0	*Trifolium incarnatum subsp. incarnatum*	Crimson Clover
1987+	Native	Grassland	134	***Trifolium medium***	**Zigzag Clover**
2002+	Neo	Grassland	3	*Trifolium micranthum*	Slender Trefoil
1987+	Native	Grassland	182	*Trifolium pratense*	Red Clover
1987+	Native	Grassland	380	*Trifolium repens*	White Clover
1960	Native	Grassland	0	*Trifolium scabrum*	Rough Clover
1987+	Native	Grassland	17	***Trifolium striatum***	**Knotted Clover**
1987+	Native	Coast	7	***Triglochin maritimum (T. maritima)***	**Sea Arrowgrass**
1987+	Native	Wetland	84	***Triglochin palustre (T. palustris)***	**Marsh Arrowgrass**
1987+	Arc	Arable	209	*Tripleurospermum inodorum*	Scentless Mayweed
1987+	Native	Coast	18	*Tripleurospermum maritimum*	Sea Mayweed
1987+	Native	Arable	219	*Tripleurospermum maritimum agg.*	Scentless Mayweed
1987+	Native	Grassland	133	*Trisetum flavescens*	Yellow Oat-grass
1987+	Cas	Arable	50	*Triticum aestivum*	Bread Wheat
1987+	Native	Wetland	8	***Trollius europaeus***	**Globeflower**
1987+	Cas	Ruderal	1	*Tropaeolum majus*	Nasturtium
1987+	Cas	Woodland	21	*Tsuga heterophylla*	Western Hemlock-spruce
1987+	Cas	Grassland	2	*Tulipa gesneriana*	Garden Tulip
1831+	Neo	Woodland	2	*Tulipa sylvestris*	Wild Tulip
1987+	Native	Wetland	229	*Tussilago farfara*	Colt's-foot
1893+	Neo	Aquatic	2	*Typha angustifolia*	Lesser Bulrush
1987+	Native	Aquatic	49	*Typha latifolia*	Bulrush
1987+	Native	Grassland	305	*Ulex europaeus*	Gorse
1987+	Native	Moorland	2	***Ulex gallii***	**Western Gorse**
1987+	Native	Woodland	235	*Ulmus glabra*	Wych Elm
1987+	Cas	Woodland	4	*Ulmus procera*	English Elm
1987+	Cas	Woodland	1	*Ulmus x hollandica = U. glabra x minor x plotii*	Dutch Elm
1987+	Native	Grassland	422	*Urtica dioica*	Common Nettle
1987+	Arc	Ruderal	51	*Urtica urens*	Small Nettle

1853	Native	Aquatic	0	*Utricularia intermedia agg. [U. intermedia, U. ochroleuca, U. stygia]*	Intermediate Bladderwort
1974	Native	Aquatic	0	*Utricularia minor*	Lesser Bladderwort
1902	Native	Aquatic	0	*Utricularia vulgaris agg. [U. australis, U. vulgaris]*	Greater Bladderwort
1987+	Native	Moorland	169	*Vaccinium myrtillus*	Bilberry
1987+	Native	Wetland	17	***Vaccinium oxycoccos***	**Cranberry**
1987+	Native	Moorland	27	***Vaccinium vitis-idaea***	**Cowberry**
1987+	Native	Wetland	75	***Valeriana dioica***	**Marsh Valerian**
1987+	Native	Wetland	139	***Valeriana officinalis***	**Common Valerian**
1886+	Neo	Riverside	3	***Valeriana pyrenaica***	**Pyrenean Valerian**
1991+	Neo	Grassland	1	*Valerianella carinata*	Keeled-fruited Cornsalad
1967	Arc	Grassland	0	*Valerianella dentata*	Narrow-fruited Cornsalad
1987+	Native	Grassland	9	***Valerianella locusta***	**Common Cornsalad**
1952	Cas	Ruderal	0	*Verbascum blattaria*	Moth Mullein
1936+	Neo	Ruderal	1	*Verbascum nigrum*	Dark Mullein
1987+	Cas	Arable	1	*Verbascum phlomoides*	Orange Mullein
1987+	Arc	Ruderal	41	***Verbascum thapsus***	**Great Mullein**
1915	Cas	Ruderal	0	*Verbascum virgatum*	Twiggy Mullein
1836	Cas	Ruderal	0	*Verbena officinalis*	Vervain
				Veronica	[See also *Hebe*]
1987+	Arc	Arable	40	*Veronica agrestis*	Green Field-speedwell
1987+	Native	Aquatic	76	*Veronica anagallis-aquatica*	Blue Water-speedwell
1987+	Native	Aquatic	100	*Veronica anagallis-aquatica agg.*	Water-speedwell
1987+	Native	Arable	173	*Veronica arvensis*	Wall Speedwell
1987+	Cas	Ruderal	1	*Veronica austriaca*	Large Speedwell
1987+	Native	Riverside	250	*Veronica beccabunga*	Brooklime
1987+	Native	Aquatic	19	*Veronica catenata*	Pink Water-speedwell
1987+	Native	Grassland	368	*Veronica chamaedrys*	Germander Speedwell
1953+	Neo	Grassland	86	*Veronica filiformis*	Slender Speedwell
1987+	Arc	Woodland	95	*Veronica hederifolia*	Ivy-leaved Speedwell
1987+	Arc	Woodland	12	*Veronica hederifolia subsp. hederifolia*	Ivy-leaved Speedwell
1987+	Arc	Woodland	19	*Veronica hederifolia subsp. lucorum*	Ivy-leaved Speedwell
1987+	Native	Woodland	79	***Veronica montana***	**Wood Speedwell**
1987+	Native	Moorland	196	*Veronica officinalis*	Heath Speedwell
1873+	Neo	Ruderal	1	***Veronica peregrina***	**American Speedwell**
1829+	Neo	Arable	206	*Veronica persica*	Common Field-speedwell
1987+	Arc	Ruderal	19	***Veronica polita***	**Grey Field-speedwell**
1987+	Native	Wetland	71	***Veronica scutellata***	**Marsh Speedwell**
1987+	Native	Arable	215	*Veronica serpyllifolia*	Thyme-leaved Speedwell
1987+	Native	Aquatic	13	*Veronica x lackschewitzii = V. anagallis-aquatica x catenata*	Hybrid Water-speedwell
1987+	Cas	Woodland	6	*Viburnum lantana*	Wayfaring-tree
1987+	Native	Woodland	22	***Viburnum opulus***	**Guelder-rose**
1987+	Native	Woodland	173	*Vicia cracca*	Tufted Vetch

1987+	Cas	Arable	21	*Vicia faba*	Broad Bean
1987+	Native	Grassland	79	*Vicia hirsuta*	Hairy Tare
1987+	Native	Grassland	10	***Vicia lathyroides***	**Spring Vetch**
1987+	Native	Grassland	2	***Vicia orobus***	**Wood Bitter-vetch**
1987+	Native	Grassland	81	*Vicia sativa*	Common Vetch
1987+	Native	Grassland	58	*Vicia sativa subsp. nigra*	Narrow-leaved Vetch
1987+	Cas	Arable	11	*Vicia sativa subsp. sativa*	Common Vetch
1987+	Arc	Grassland	18	*Vicia sativa subsp. segetalis*	Common Vetch
1987+	Native	Grassland	289	*Vicia sepium*	Bush Vetch
1987+	Native	Woodland	21	***Vicia sylvatica***	**Wood Vetch**
1982+	Neo	Grassland	3	*Vicia tetrasperma*	Smooth Tare
1878+	Neo	Rock	13	*Vinca major*	Greater Periwinkle
1987+	Arc	Woodland	14	*Vinca minor*	Lesser Periwinkle
1987+	Arc	Arable	174	*Viola arvensis*	Field Pansy
1987+	Native	Grassland	2	***Viola arvensis x lutea***	**A hybrid Pansy**
1987+	Native	Grassland	10	***Viola canina***	**Heath Dog-violet**
1987+	Native	Grassland	4	***Viola hirta***	**Hairy Violet**
1987+	Native	Grassland	41	***Viola lutea***	**Mountain Pansy**
1831+	Neo	Woodland	20	*Viola odorata*	Sweet Violet
1987+	Native	Wetland	89	*Viola palustris*	Marsh Violet
1987+	Native	Woodland	319	*Viola riviniana*	Common Dog-violet
1987+	Native	Grassland	17	***Viola tricolor subsp. tricolor***	**Wild Pansy**
1987+	Native	Grassland	5	***Viola x intersita = V. canina x riviniana***	**A hybrid Dog-violet**
2007+	Neo	Ruderal	3	*Viola x wittrockiana = V. altaica x lutea x tricolor*	Garden Pansy
1971	Cas	Woodland	0	*Viscum album*	Mistletoe
1987+	Native	Grassland	38	***Vulpia bromoides***	**Squirrel-tail Fescue**
1987+	Cas	Ruderal	4	*Vulpia myuros*	Rat's-tail Fescue
1987+	Cas	Woodland	4	*X Cuprocyparis leylandii = Cupressus macrocarpa x Chamaecyparis nootkatensis (Xanthocyparis nootkatensis)*	Leyland Cypress
1916	Native	Moorland	0	*X Dactylodenia legrandiana = Dactylorhiza maculata x Gymnadenia conopsea*	A hybrid Orchid
1987+	Native	Grassland	7	***X Festulolium loliaceum = Festuca pratensis x Lolium perenne (X Schedolium loliaceum = Schedonorus pratensis x Lolium perenne)***	**Hybrid Fescue**
				X Schedolium	[See *X Festulolium*]
1987+	Cas	Arable	13	***X Triticosecale rimpaui = Triticum aestivum x Secale cereale***	**Triticale**
1995+	Neo	Woodland	1	*Yushania anceps*	Indian Fountain-bamboo
				Xanthocyparis	[See *Chamaecyparis*]
1987+	Native	Aquatic	13	***Zannichellia palustris***	**Horned Pondweed**
1987+	Cas	Arable	6	***Zea mays***	**Maize**

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Clockwise from top left:
Berwickshire Naturalists' Club at *Scilla verna* site, Gunsgreen
Edinburgh Natural History Society above Brander Heugh
Tibbie Fowler's Glen, Whiteadder Water
***Butomus umbellatus* in the Whiteadder Water below Edrington Castle**

Front cover:
A Hybrid Pansy *Viola arvensis x lutea* at Hareheugh Craigs